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THE MOTHER'S HAND-BOOK:

A PRACTICAL TREATISE

ON THE

Management of Children

IN

HEALTH AND DISEASE,

WITH

AN APPENDIX,

CONTAINING ARTICLES ON DISEASES AND ACCIDENTS THAT MAY SUDDENLY HAPPEN TO GROWN PERSONS.

BY

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PREFACE.

THE following pages have been written with the hope that the information contained in them will be of use to mothers and others who are charged with the responsibility of rearing children.

The author has endeavored to make the book a useful guide, especially to those who live in the country, or in small towns, where medical advice cannot always be obtained when desired.

While directions are given for the administration of medicines in simple cases, and when emergencies require prompt action, it has been the aim of the writer to discourage the mother from assuming the functions of the physician and undertaking to treat, by means of drugs, diseases of a serious or complicated character.

The author believes that to recommend a large number of medicines in the treatment of the various diseases to which children are subject would confuse the mother and lessen the value of the book. He has, therefore, confined his treatment to but few remedies, which he believes to be both safe and efficient.

If a mother has some knowledge of diseases and their management, she will often be able to relieve her child of pain and discomfort which might otherwise continue for hours. This is especially true when no medical practitioner is within easy reach.

Again, accidents may happen when immediate relief must be obtained quickly, or else death may speedily follow. In such cases the mother must act promptly and upon her own responsibility. It is believed that under such circumstances the information given in the pages of this book will be found useful.

The feeding of infants is a subject of great importance, and considerable space has been devoted to its consideration.

It is hoped that those who are about to become mothers will find much in the chapters on Pregnancy and on Confinement that will be of advantage not only to themselves, but also to their offspring.

For the benefit of those who live in districts where medical aid cannot be secured quickly, an Appendix has been added, in which some of those diseases and accidents that may suddenly befall grown persons are treated of in plain and concise language.

A part of the matter contained in the chapter on "The Mother and the Physician" has been taken from the valuable work of Professor Fonssagrives, entitled "The Mother's Work," translated by Dr. F. P. Foster, and published by G. P. Putnam & Sons, New York, 1872.

An experience of more than thirty years in town and country practice, induces the author to believe that the recommendations given in the following pages are judicious, and if strictly followed will lead to beneficial results.

LEVIN J. WOOLLEN.

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WASHINGTON, D. C., 1891

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THE MOTHER'S HAND-BOOK.

Pregnancy.

THE INFLUENCE OF THE MOTHER'S MODE OF LIFE, DURING PREGNANCY, ON THE CHILD.

EVERY woman about to become a mother should bear in mind that her offspring will be influenced to a great extent by her bodily and mental condition during the period of pregnancy. The knowledge that any violation of the laws of health on her part will affect her unborn babe should teach her to be guarded in her actions and longings, and to maintain, as far as possible, a cheerful disposition and an agreeable frame of mind.

Authentic cases are recorded where mothers, agitated by distressing anxieties during pregnancy, have given birth to children who were a prey to nervous or convulsive diseases, or displayed a timidity of character that lasted through life. A sudden shock to the mother, caused by witnessing a frightful catastrophe, or a disgusting object, may injuriously affect her unborn child; but continued nervous excitement, a state of fear, anger or grief, borne day after day, or week after week, is much more apt to stamp its effects upon the child than a sudden fright, or shock of any kind, that soon passes away.

The presence of deformities, or stains, marks or moles, that are sometimes observed on the bodies of infants, are often accounted for by the mother on the ground that she

was frightened by some object, or that she had a longing for some fruit that, in her opinion, resembled the "mark" on her child. Such views are erroneous, and rarely, if ever, have any foundation in truth.

Although the mother's mark, or other physical deformity of a child, is rarely, if ever, caused by a "scare" or a "longing," yet there is a direct relation between the state of health and feelings of a mother, while pregnant, and the *general constitution* of her child. Thus, if the mother, during the term of her pregnancy, be nervous, fretful and passionate, she may expect to give birth to a child possessing in some degree the same qualities of temperament.

It is well known that different children of the same parents are often very unlike in their tastes, habits and dispositions. One may be gentle, kind and even-tempered, while another is entirely different. The probabilities are that in many cases this difference of temperament is due to the mother's mental condition and peculiarities at the time she was carrying her child in her womb.

It therefore becomes the sacred duty of every mother, from the moment of conception, to endeavor to maintain the highest degree of mental and bodily health possible. Such an effort entails upon her no real sacrifice; and while it adds to her own happiness and freedom from many ills, it will conduce to the future welfare of her offspring.

It should be remembered that pregnancy is a physiological process, and that under favorable conditions there should be but little deviation from ordinary good health. The idea that it is a period of great danger is not well founded, unless it is rendered so by mismanagement on the part of the mother herself. But while it is a physiological condition, and not necessarily connected with any great departure from usual health, yet during this period slight causes may produce greater disturbances in the patient's

system than would be the case under other circumstances. This knowledge should teach the mother that while she can rest assured of a safe delivery in the end, if she pays strict attention to the laws of health, and exercises care and prudence in her methods of living, yet she must not forget that now she must be even more guarded than before; otherwise by her own imprudence and folly she may lay the foundation for troubles that are liable to last through life, and seriously affect the well-being of her offspring.

"Gloomy, painful and harassing impressions should be guarded against, and good nature, equanimity and cheerfulness cultivated by all around her." She should engage in healthful and invigorating occupations, such as will insure her a proper amount of bodily exercise and at the same time give employment to her mind, thereby preventing her from dwelling too much upon her condition and the dangers that she fancies are in store for her.

Attention must be given to the necessity of breathing good fresh air, to sleeping in a room that is properly ventilated and not too dark, to exercise in the open air, to diet, and to all the ordinary conditions of good health. In regard to diet, it may be said that the food should be of a nourishing character and easily digested.

A healthy woman need not make much change in her diet during pregnancy. If her appetite is good, and her digestion perfect, she may eat more than before, since there is an increased demand upon her to furnish nourishment for her unborn child.

It is important that the mother should not restrict herself to a too limited amount of food, thinking thereby to relieve herself of heartburn, flatulence, nausea and other troubles that attend upon indigestion.

The "longings" for certain articles of diet, that some women indulge in during pregnancy, are rarely seen in

one of good health and well constituted mind. They are usually found in delicate, nervous and irritable women, who have not a proper occupation to engage their time and thoughts. Much can be done in these cases by advising the patient to fix her mind on more wholesome matters, and at the same time to partake of a proper amount of plain, mild food. Occasionally, in confirmed cases, it may be advisable to yield to some extent to the depraved longings of the patient.

Pregnancy and childbirth may be seriously affected by the mother's method of dressing before becoming pregnant.

The young wife who has reason to believe herself pregnant should so arrange her dress as to avoid unduly compressing any part of the body. The chest must be left free to move without restraint at each act of respiration. The clothes must fit loosely around the waist, as pressure upon the abdomen is not only hurtful but often dangerous.

Those who from childhood have been encased in unyielding stays and corsets will probably, when they become mothers, pay the penalty of their previous folly. The human body needs no artificial aids to its shapeliness, for, if there be no undue pressure upon any part of it, and if perfect freedom be given to its muscles and various organs, the figure will develop gracefully and elegantly.

But if a young married woman has been accustomed from childhood to the use of stays and corsets, it may not be best to lay them aside at once. Long continued use may render their support, to some extent, necessary; and in such cases it will be well to substitute a corset made of thin whalebones for the stiff steel blades in common use. Even this should be worn loosely, so as to admit of free respiration and the gradual enlargement and ascent of the womb.

"If women could be convinced that, as a general rule, the danger attending confinement in childbed is in proportion

to the previous sound or unsound condition of the system, and to good or bad management at the time, they would be much more anxious than they are to conform to the laws of health, both for their own sake and for the sake of the child whose welfare is so largely committed to their trust."

DEVIATIONS FROM HEALTH DURING PREGNANCY.

As pregnancy has such a wonderful effect upon the womb, changing its size, its form, and even its structure, it is scarcely possible that a woman can pass through the pregnant state without the various functions of the body becoming greatly affected. In a few cases the changes in the system, wrought by pregnancy, seem to be salutary, the patient enjoying better health than at any other period. In a majority of cases, however, disagreeable symptoms are experienced as the result of the changed condition of the uterus. These troubles, which in many are so slight as to amount merely to discomforts, are in other cases so great as to seriously impair the health of the patient.

The breasts must receive attention during pregnancy. The skin covering the nipples is thin, sensitive, and liable to become inflamed from slight causes; hence the dress should be arranged loosely, so as to avoid all pressure upon the parts.

If the breasts become swollen and painful, causing the patient much trouble and anxiety, they should be gently and carefully rubbed with warm sweet oil once or twice a day until the trouble subsides.

During the latter months of pregnancy the *nipples* should be examined, and if they be flattened or sunken, measures must be taken to make them prominent, so that the child may be able to suck. This can be done by frequently placing the inverted bowl of a clay pipe over them and drawing them out gently by suction. Neglect of this precaution may

give rise to a great deal of trouble and suffering, ending in sore nipples, and, in some cases, in abscess of the breasts.

A useful wash for nipples during the last month of pregnancy is made by dissolving a tablespoonful of tannin in a gill of alcohol, to which a gill of water has been added. This can be applied morning and night by dipping a camel's hair pencil, or a feather, into it and touching the nipples. No rubbing or friction is permissible, merely wetting the nipple being sufficient. A nipple treated in this manner is not likely to become cracked, or sore from the efforts of the child in sucking.

Women usually complain of *constipation of the bowels* during the period of pregnancy. The tendency to this trouble should be counteracted, if possible, by a proper regulation of the patient's habits and diet. She should eat brown bread and plenty of fruit, such as stewed prunes, stewed rhubarb, baked pears, baked apples, oat-meal mush with fresh milk, etc. An occasional injection of a pint of tepid water will aid in overcoming the trouble.

Much assistance can be given the bowels in cases of constipation by visiting the water closet at a certain hour each morning and remaining quite a while, gently *persuading* the bowels to act.

If these measures fail to correct the trouble, recourse may be had to mild aperient medicine; but patients should remember that medicines should be used only after the means above mentioned have proved ineffectual.

Castor oil is an old and safe remedy, but its disgusting taste renders its use very objectionable to most persons. It should be taken in small doses, and if properly administered the patient will scarcely taste it. The best way of administering castor oil is to take a small cup and rinse it out with hot water; then squeeze into it a tablespoonful of the juice of an orange; then pour in the oil, and on top of this

squeeze a little more orange juice. Now rinse the mouth with some of the juice of the orange, and quickly swallow the oil, taking pains that none shall stick to the lips. Have a wet napkin at hand and thoroughly wipe the lips before taking a breath, and the oil will not be tasted. If an orange be not at hand, essence of cinnamon or peppermint, or some similar liquid, can be substituted. If oil cannot be taken, recourse may be had to the citrate of magnesia, or a Seidlitz powder early in the morning.

Pills of castile soap, softened with a few drops of sweet oil, of which three or four may be taken at bed-time, will often serve a good purpose.

Diarrhœa.—Sometimes a pregnant woman is subject to diarrhœa. It may be the result of previous constipation, nature making an attempt, in this manner, to get rid of the long retained fecal matter.

If such be the cause, the proper remedy is a mild aperient, such as a syrup made of the root of Turkey rhubarb, or, if preferred, the citrate of magnesia, or a Seidlitz powder. For a few days the diet must be mild and bland, composed of such articles as chicken broth, oat-meal gruel, rice, tapioca and kindred articles. If the diarrhœa is attended with much pain, relief can usually be obtained by placing warm applications over the bowels.

In cases that are stubborn, and especially if there be a tendency to flux, an occasional dose of Godfrey's Cordial (a dessertspoonful), added to a like quantity of the aromatic syrup of rhubarb, will afford great relief.

Heartburn is a most common and distressing complaint, and sometimes continues throughout the whole course of pregnancy; but usually some relief is obtained about the close of the eighth month. It is a sign of indigestion and is caused either by overtaxing the stomach with food, or by pressure made upon it by the womb, or by both.

The patient should reduce the quantity of food at each meal, and be more careful of the quality, eliminating from her diet such articles as do not agree with her. If the heartburn continues, temporary relief can often be obtained by taking a large teaspoonful of calcined magnesia in a wine-glassful of warm water. If this does not afford relief the patient may take a teaspoonful of the bi-carbonate of soda (common baking soda) in a wine-glassful of cold water.

Water Brash.—This consists of an eructation of a thin, watery fluid, often in large quantities, from the mouth, and is a usual accompaniment of heartburn. In some cases water-brash continues during the whole term of pregnancy.

The same remedies used in heartburn are proper in this affection, and, in addition, a teaspoonful of charcoal in a half glassful of water should be taken occasionally.

Piles.—Pregnant women are often afflicted with piles, which, according to their situation, are called internal or external. They may be either blind or bleeding. The latter may give rise to considerable loss of blood when at stool, and therefore the patient should relieve her bowels as quickly as possible, and remain over the stool no longer than is necessary. If the piles be internal and protrude only during straining at stool, the patient must carefully replace them with her fingers as soon as the bowels are emptied. If the piles cannot be easily returned, and are painful, the patient should occasionally sit in a vessel containing water as hot as can be borne. This will greatly relieve the pain and inflammation; after which the piles should be well anointed with an ointment made by mixing a teaspoonful each of gum camphor and powdered galls with four tablespoonfuls of fresh lard.

Piles are always rendered more painful by a constipated condition of the bowels. When it becomes necessary to resort to medicine to keep the bowels open the best remedy

will be found to consist of equal parts of flour of sulphur and cream of tartar, to be well mixed. A large teaspoonful of this mixture can be taken each morning in a little molasses or thick syrup. If the patient objects to the sulphur and cream of tartar mixture, she can take either the citrate of magnesia or Tarrant's Seltzer powder.

An occasional injection, carefully made, of a pint of warm water will afford great relief, and may sometimes take the place of purgative medicine. Care must be exercised in introducing the point of the syringe to avoid injuring the piles.

The disease usually lasts during the whole period of pregnancy; but temporary relief can be obtained by following the directions above given.

Toothache.—Pregnant women are liable to suffer greatly from toothache, and there is a popular belief, sanctioned by some medical writers, that a tooth ought never to be extracted during pregnancy. This is erroneous; for, while a pregnant woman ought not to have a tooth extracted for a trifling or transient toothache, she should not hesitate to have the operation performed when she finds it impossible to obtain relief by ordinary remedies, and when the pain has been so severe and long continued as to deprive her of rest and sleep. The only danger in extracting teeth under these circumstances is in the shock of the operation, which, in a very delicate, nervous woman, might possibly lead to a miscarriage. But this very rarely occurs; at least, such cases have never come under my observation. The constant and severe pain of an aching tooth, which destroys sleep and reduces the patient to a weak, exhausted and nervous condition, is more likely to lead to a miscarriage than the mere operation of extracting a tooth.

But before the patient submits to such an operation, every means of allaying the pain by local applications should be tried. If the tooth be much decayed and the

hollow part exposed, it can be filled with a bit of cotton that has been soaked in oil of cloves, or in a mixture of cloves and chloroform. Sometimes the chloroform alone, or equal parts of chloroform and laudanum, will answer a good purpose. If this does not give relief, the cotton may be wet with creosote and placed in the cavity. If creosote is used, it must not be permitted to touch the gums, tongue, or cheeks, as it will burn them. To avoid this, the parts should be protected by placing cotton in the mouth, leaving only the tooth exposed. With care, the creosote can then be inserted in the cavity without danger of its touching the gums or other parts of the mouth. If the aching tooth be in the upper jaw, it is not likely that such applications will afford the same relief as they would if it were a lower one.

If these remedies do not ease the pain, recourse must be had to the application of flannel wrung out of hot water and applied to the side of the face. If properly applied the hot cloths will nearly always give relief. Take a piece of flannel a yard or more in length, and of the usual width; fold it the whole length, making it about six inches wide. Now double it so that it will be only half a yard long. Dip this into very hot water in such manner as to wet the whole flannel except about six or eight inches of the free ends. Squeeze the surplus water out of the flannel, and fold the wet part upon itself, forming a compress about six inches square. Fold the free ends of the flannel (which are dry) over the wet compress on each side, and apply it to the face.

It should be cautiously applied at first, as the water should be hotter than the patient can bear, until she gradually becomes used to it. Let it touch the face for a second, withdrawing it if too hot, and then again cautiously applying it until the patient can permit it to remain. It must be renewed every five or ten minutes until relief is obtained.

Pruritus, or itching of the vagina and neighboring parts, is sometimes so severe as to almost wear out a patient both mentally and physically. The sleep is destroyed at night by the intense itching, and to relieve it the patient is compelled to rub the part, thus aggravating the disease.

The skin around the vagina is the usual seat of pruritus, and from the irritation produced by rubbing it soon becomes inflamed and ulcerated. The disease often extends to the mucous membrane inside of the vagina, causing inflammation and swelling of the structures.

The symptoms are usually difficult to relieve, some cases requiring the use of a variety of remedies before the disease is controlled.

The affected parts should be bathed with water as hot as can be borne, to which a little baking soda has been added, and afterwards wet with a mixture consisting of one part of alcohol and two of water. If this wash causes severe smarting it can be weakened by adding more water. Sometimes a solution of sugar of lead, an even teaspoonful to a half pint of water to which a tablespoonful of laudanum has been added, affords considerable relief. When the parts have dried, after having been wet with the wash, they should be dressed with the oxide of zinc ointment, to which powdered gum camphor has been added in the proportion of a teaspoonful to an ounce of the ointment. Before mixing the camphor with the ointment, it should be dissolved by the addition of a few drops of alcohol, after which it can be readily powdered. In some cases great relief follows the use of an ointment consisting of a teaspoonful each of chloral and camphor with two teaspoonfuls of glycerine and a tablespoonful of vaseline. The ingredients should be well mixed and applied night and morning.

In some severe cases, where the disease was limited to the skin around the vagina, I have had excellent results from

painting the diseased parts with white lead after the manner described in the article on burns.

Pain from distention of the abdomen may be troublesome in some cases. All that is necessary to be done is to gently rub the abdomen with warm sweet oil several times a day until relief is obtained.

Cramps in the legs, from pressure of the womb on the large nerves at the brim of the pelvis, are quite common during the latter months of pregnancy, being usually worse at night than during the day. The treatment consists of firm friction with the hand over the painful spot. In very bad cases it may be necessary to wear an elastic stocking to make equable pressure on the limb.

Swelling of the limbs occurs in the latter months of pregnancy. Unless the swelling is unusually great, all that is needed is to lie down occasionally through the day, with the limbs slightly elevated, to favor a return of the venous blood to the heart. In very severe cases, where there is danger of the veins bursting, it may be necessary to wear an elastic stocking to support the circulation.

If the face and upper extremities become swollen, and especially if this condition is accompanied with severe and persistent headache, the symptoms are of a more serious character, and may indicate a morbid condition of the kidneys. Under such circumstances the patient should without delay consult a competent physician and have him examine her urine to ascertain if it contains albumen. Puffiness of the face and eyes, with severe headache, and a continuous sharp pain at the pit of the stomach, occurring in the latter part of pregnancy, are symptoms that must not be overlooked; and women suffering from them should place themselves under medical treatment, in order to avoid serious trouble during, or after, their confinement.

Salivation.—Sometimes pregnant women are troubled with a too free secretion of saliva, which causes them to be almost constantly spitting. At night, during sleep, the saliva flows from the mouth and wets the pillow upon which the patient's head rests.

The trouble, though annoying, is not attended with danger, and usually subsides without treatment. Some relief, however, may be obtained by using a mouth wash made by dissolving a heaping tablespoonful of tannin in a half teacupful of alcohol and a teacupful of water. If a spoonful of powdered myrrh be added to the mixture it will increase its usefulness.

The vomiting of pregnancy presents two different forms. The *first*, called "morning sickness," is more a matter of discomfort and annoyance than of danger. The *second*, or *irrepressible vomiting*, is always a severe and sometimes a dangerous complaint.

In the first, or simple form, the vomiting often commences in the very earliest stages of gestation. At other times it does not appear until toward the third or fourth month. Occasionally it begins in the first month and subsides at the end of the fourth, only to reappear near the close of pregnancy. As an ordinary rule, the vomiting lasts from six to eight weeks, but it may extend over a period of four or five months, and in exceedingly rare cases it continues during the whole term of pregnancy. Some women are subject to the complaint every time they become pregnant, while others pass through several gestations without any digestive troubles whatever. In many cases the vomiting is confined to the forenoon of each day, and it may be unattended with any impairment of the general health—the woman continuing in her usual flesh and strength.

The *second*, or irrepressible form of vomiting, is a much more serious disease than the foregoing. It may begin sud-

denly as a severe complaint, but more often it commences as a simple vomiting, and gradually assumes an irrepressible character; it being impossible to distinguish, with accuracy, the period of transition from the simple to the graver form.

In this variety of the disease the vomiting is frequent and occasions the rejection of nearly all the food and drink which the patient takes. Bilious matter, mixed with mucus, in addition to the food and drinks, are thrown up from the stomach. The breath has a sour, fetid smell, and in some cases the patient has fever.

The discharges from the bowels are usually of an acid nature, and may contain mucus mixed with blood.

Sometimes the aversion to food is so great that it is with difficulty that the patient can be persuaded to take enough nourishment to sustain life. Grave signs of insufficient nutrition soon appear, and the patient rapidly becomes weak and emaciated, with altered features.

In the worst cases the symptoms continue to grow more severe; the attacks of vomiting are frequent and violent, while the emaciation rapidly increases; the fever becomes more marked; the mouth is dry, the thirst is intense, and the breath is extremely offensive, the odor being perceptible throughout the room.

Although death from this disease is exceedingly rare, yet fatal cases have been reported—the patients dying of exhaustion. Delirium, fainting, profound sleep, with other symptoms of disturbance of the brain, usher in the fatal result.

In the advanced stages of the disease, when life seems to be in great peril, the induction of premature labor has been practiced, it being in some cases the only means by which life can be saved.

Treatment: The patient should confine herself to a mild, nourishing diet, easy of digestion, and should avoid fluids

as much as possible. The bowels should be regulated by mild laxatives, such as Husband's Magnesia, or Tarrant's Seltzer powder. If the vomiting becomes very troublesome, temporary relief may occasionally be had by lying in bed during the hours when the suffering is usually the greatest.

When the trouble is slight, and occurs in the morning only, small quantities of iced tea, iced mineral waters, or champagne, and sometimes small pieces of ice, can be taken with advantage.

When the vomiting takes place after a certain meal, say breakfast, the patient being unable to retain the food eaten, such meal should be a very light one, and the deficiency in the amount of food taken should be supplied by eating more at dinner and supper.

If these measures prove unsuccessful, it may be necessary to take one-twentieth of a grain of morphine before the meal.

In the irrepressible form of vomiting, where the patient's flesh and strength rapidly fails because of her inability to retain enough food to nourish the body, a physician must be consulted, and if ordinary remedies fail to afford sufficient relief to warrant the belief that the woman can safely go to her full term, the question of the induction of premature labor may be considered.

Hemorrhage.—Owing to a variety of causes, pregnant women may be subject to a loss of blood from some portion of the genital organs. Sometimes the bleeding commences soon after conception, being, in some cases, continuous, while in others it comes on at regular intervals, but the discharge being slight, it creates no great alarm. The bleeding, in such cases, most probably comes from the mouth or neck of the womb—they being ulcerated or congested—and is unattended with danger to life.

Hemorrhage from the uterus, occurring during the first six months of pregnancy, may give rise to, or accompany, abortion.

Hemorrhage during the latter months of pregnancy is caused by partial separation of the after-birth from the surface of the womb, and is attended with danger to life. In all such cases a physician should be consulted without delay.

When the after-birth is implanted over or around the internal mouth of the uterus, hemorrhage always takes place when the womb begins to dilate during the first stage of labor. Such hemorrhages are styled *unavoidable*. If the after-birth be attached to the inner surface of the womb at some point other than at or near its mouth, and hemorrhage takes place, it is owing to a separation of some portion of the after-birth from accidental causes. Hemorrhages of this character are called *accidental*, and may be profuse or slight according to the amount of placental detachment that has occurred.

Ordinarily, accidental as well as unavoidable hemorrhage shows itself externally by profuse gushes of blood from the womb. This is not, however, always the case, for sometimes, though rarely, when the after-birth is partially separated by accident, the blood that escapes may be retained in a kind of capsule formed by the separated portion of the after-birth and the inner surface of the womb, constituting what is known as *concealed* hemorrhage. In such cases the effused blood may be entirely concealed, or a few clots may escape externally while the greater portion remains pent up within the womb. Of course, under such circumstances the amount of blood that escapes externally is no criterion by which to judge of the patient's danger.

The most dangerous form of hemorrhage to which a pregnant woman is liable is that caused by partial separation of the placenta. If the after-birth be implanted around the mouth of the womb, constituting what is known as *placenta praevia*, there is certain to be flooding of an alarming character at some period before actual labor commences.

The hemorrhage may come on suddenly and in gushes, and unless promptly arrested it will soon exhaust the patient. The bleeding may cease soon after the woman takes to her bed, or it may continue until life is imperilled. It may cease spontaneously, only to recur at some future time with equal intensity. During confinement, cases of placenta praevia (which, fortunately, is a very rare complication) are always attended with considerable flooding, and require the greatest skill on the part of the attending physician for their safe management. A woman suffering from such hemorrhage during pregnancy should, as soon as possible, consult a physician and place herself under his treatment. If the flooding be so profuse as to threaten life during the absence of her medical adviser, she should lie quietly in bed, with her hips raised higher than her shoulders and head, and, if the hemorrhage continues, the nurse should proceed to plug the vagina according to the directions given in the article on abortion, to which the reader is referred.

MISCARRIAGE, OR ABORTION.

The term *miscarriage*, or *abortion*, is applied to those cases where the fœtus passes from the womb before the seventh month of pregnancy. After the seventh, and before the ninth, month it is called *premature labor*.

A miscarriage may be produced by a variety of causes, probably the most frequent being intentional interference with the process of gestation, either by the use of instruments or the taking of certain powerful medicines with a view of destroying the fœtus, and preventing the birth of a living child. Aside from the moral guilt that a mother must feel when she reflects that she has purposely destroyed the life of her own offspring, she soon realizes that by her own sinning she has brought upon herself physical ailments that will probably last as long as she lives. Abortions, pur-

posely induced, are more dangerous to life than natural labors, and besides, they are, in nearly every instance, more or less destructive to the future health of the patient. In the cities and large towns, the crime of abortion is common, and women who submit to it seem to have but little thought of its sinfulness, or its destructive influences on their lives and future health.

The causes of natural miscarriages may exist either in the ovum or fœtus, or in the mother herself. The fœtus may be affected by disease inherited from one of its parents, as syphilis; the cord may be twisted in such manner as to cut off the circulation of blood in it; or the after-birth may become detached from the womb prematurely; or be attached too low down in the womb, or perhaps over the mouth of the uterus—a condition that gives rise to dangerous flooding previous to or during labor. Where from any cause there is an arrest of development of the fœtus, miscarriage nearly always results.

On the part of the mother, diseases, such as small-pox, measles, erysipelas, pneumonia, and other affections, may lead to miscarriage. Shock to the nervous system, when severe, may produce abortion. Injuries from falls, blows, etc., may terminate in the same way. Chronic inflammation of the lining membrane of the womb, tumors of the uterus or of the neighboring parts, as well as some displacements of the womb, may give rise to this trouble. A woman who has once miscarried at a certain month is liable to a subsequent miscarriage at the same date, and where two or more abortions have happened at the same period of gestation, it is almost impossible thereafter for a woman to carry a child to full term.

When abortion is threatened the patient usually begins to bleed from the womb before there are any pains to attract her attention. Sometimes pains of an intermittent charac-

ter, situated within the pelvis, are felt before the hemorrhage, but this is usually rare. The amount of blood lost varies greatly in different cases. Often it is small in quantity, and continues for a long time without pain. After awhile pains come on and the fœtus is expelled. In other instances the hemorrhage is sudden, and from the great amount of blood that is lost it becomes dangerous. The after-birth in these cases has been implanted over the mouth of the womb, constituting what is known as *placenta praevia*, and as the womb dilates the placenta is separated from it, exposing the large blood vessels, which pour out their contents in great quantities.

Sometimes a miscarriage begins with rupture of the membranes and a discharge of water from the womb. After awhile pains come on and the fœtus is expelled.

In the treatment of abortion it must be ascertained if the trouble is only threatened, or if it is in actual progress.

In threatened abortion the patient should go to bed and remain in a recumbent position. The diet should be mild and non-stimulating. Warm drinks must be discarded, and thirst should be relieved by cold water. If the pains are at all severe, an injection consisting of a half teaspoonful of laudanum in a gill of starch water can be thrown up the bowel.

If the symptoms continue to increase, medical assistance must be obtained without delay.

If a woman has previously miscarried at a certain period of gestation, it is essentially necessary that as she approaches the dangerous period in subsequent pregnancies she should use the greatest care and caution possible to escape the threatened danger. She must then lie down and rest at frequent intervals during the day. She should neither lift heavy weights nor perform hard manual labor, but take sufficient exercise to keep up a good appetite and digestion. The

bowels ought to be kept regular, but harsh purgative medicines must be avoided. If she has pain in the pelvic organs she should occasionally take a laudanum and starch-water injection as above recommended, and remain in bed until relieved. By using great prudence and care she may pass the danger line and carry her child to full term.

When abortion has actually commenced and there is no hope of its arrest, no time should be lost in waiting, but a physician must be immediately summoned. In case his arrival is delayed certain measures can be adopted with advantage.

In actual abortion the pains are not to be interfered with, because they are necessary to produce evacuation of the contents of the womb. The hemorrhage constitutes the danger to which the woman is subjected, and certain means, in the absence of a physician, may be used either to moderate or to check it. The foot posts of the bed upon which the patient lies should be raised four or five inches by placing bricks or blocks under them. The pillows can be removed so that her head may be low. If the flooding be profuse, or if it has continued long enough to weaken the patient to any great extent, a plug or tampon of cotton batting must be used. To apply this properly some of the cotton should be firmly rolled into a ball about the size of a goose egg. This should be tied to the end of a strong string so as to be easy of removal. The patient's hips being placed on a pillow and her limbs widely separated, the nurse gently introduces the cotton into the vagina with her fingers, and pushes it up as high as possible so as to press it against the mouth of the womb. Additional pieces of cotton can now be introduced and crowded up against the first until the whole canal is tightly packed. If there is a tendency to expel the cotton by straining, it will be necessary to keep it in position by pressing against it with the hand until the physician arrives,

or else it can be confined by a properly constructed bandage passed between the limbs and fastened in front and behind to a strip that has been placed around the body. The greatest gentleness and caution must be observed in following the above direction.

A moderate amount of whiskey, or wine, or other stimulants, can be given for the purpose of keeping up the patient's strength until the arrival of her medical attendant.

CHAPTER II.

Confinement.

PREPARATIONS FOR CONFINEMENT.

AS the time approaches when a woman expects to be confined, her attention should be given to making preparations for the event. She will need a few extra articles of clothing for her own use, and some dressings for the bed upon which she is to lie, as well as proper clothes for the child.

The gowns that she is to wear, while in the lying-in state, should be made much shorter than her ordinary night gowns, as they will answer every purpose of the long ones and will be more convenient.

For the first few days after confinement the bandage can be made of a towel or strip of muslin sufficiently long to go around the body. It will be necessary to change it very often, and hence there is no need, at this period, to use one that requires time and labor to construct. But after the wasting has in a measure ceased, a well fitting bandage, properly made, will be much more comfortable and useful. It should be of heavy unbleached muslin, not too coarse, and should be a little over a foot in width, and about a yard and a quarter in length, so as to reach around the body. It should come well down over the hip bones, and the lower edge can be gored, so as to make it a little narrower than it is a few inches above. This will prevent any tendency that it

may have to slip upwards. Of course, the upper part of the bandage should be narrower, so as to fit the body around the lower ribs.

The bed should consist of a soft mattress, upon which is first placed a comfort, and then a sheet. On the right side of the bed, where the patient's body will rest, an oil cloth should be laid, and over it an old comfort that has been twice folded. A sheet, upon which the woman will lie, can be laid over the comfort. When labor is completed, the sheet, comfort and oil cloth can be removed, leaving the bed ready for the patient to rest upon. A few clean napkins and towels—those that are well worn are the best; a few old muslin cloths; some good castile soap; a pair of scissors; some pins, and some fine tape or thread with which to tie the navel-string, should be within easy reach when wanted.

That portion of the child's clothes that are worn next to the skin should be made of canton flannel. The petticoats ought to be of fine flannel, and no part of the clothes should be starched. The diapers must be of fine canton flannel.

When waiting upon a woman in labor, as well as during her lying-in period, the nurse must observe the strictest rules of cleanliness. She must thoroughly wash her hands in hot water, and clean her finger nails before examining the patient, or giving her an injection, or touching her in any manner about the birth passages. Under the finger nails of a nurse are often concealed disease-producing germs that, on being introduced into the mother's passages, may produce a disease of the most fatal character.

Napkins and bandages that have been soiled by discharges from a lying-in woman must be frequently removed and destroyed or placed in boiling water.

No person having an old ulcer, or a sore of an offensive character, should be permitted to enter the room of a lying-in

woman, as septicæmia, or child-bed fever, might result from such exposure. Absolute cleanliness on the part of both patient and nurse is essential during the whole lying-in period.

A neglect of these precautions may cost the patient her life.

LABOR.—While first labors are probably not more dangerous than subsequent ones, they are generally more protracted and severe. It is usually during her first pregnancy that a woman makes the mistake of thinking that she is in labor and sending for a physician, when, in fact, the labor has not commenced. These mistakes are called "false alarms," and are a cause of much embarrassment to a young woman.

Labor is divided into three stages. The *first stage* begins at the commencement of the pains, and terminates when the neck of the womb is thoroughly dilated.

The *second stage* begins when the neck of the womb is dilated, and ends with the birth of the child.

The *third stage* begins with the birth of the child, and ends with the expulsion of the after-birth.

Symptoms of Approaching Labor.—It often happens that a day or two before labor begins the woman feels better than usual. She seems to be smaller, she breathes easier, and is freer from stomach disorders.

This is owing to the "dropping of the womb," so called. The womb settles lower down in the pelvic cavity, and hence there is less pressure on the stomach, diaphragm and other organs. As it does this it necessarily presses more or less on the bladder, and the irritation caused by the pressure usually gives rise to irritability of that organ and a frequent desire to pass water. If this trouble becomes very severe the patient should take to her bed, as lying on her back with her hips raised will give her some relief. About this time she will notice that there is an increase of moisture of the pas-

sages leading to the womb. This secretion soon becomes thick, and consists of mucus streaked with blood. This discharge must not be confounded with true hemorrhage, which may occur at this period and is always a complication that requires the immediate attention of a physician. While the "show" consists of lumps of mucus streaked with blood, hemorrhage always appears as clear fluid blood, or else in the form of clots of blood, either dark or red, and unmixed with other substances.

The appearance of the "show" indicates that labor has really commenced.

First Stage of Labor.—About the time the show begins the woman feels slight cutting pains, which increase in severity and frequency until she is in hard labor. These cutting or "grinding" pains come on at uncertain periods, from a half hour to two hours apart.

When the pains are of a cutting or grinding character no attempt should be made to aid them by "bearing down." This will do no good and will weaken the patient.

A woman about this time may be seized with shivering, which, although it may be sufficient to make her teeth chatter, is not attended with coldness of the body and is not an unfavorable symptom. No spirituous liquor of any kind should be given under these circumstances, except by direction of a physician, but the patient may take hot tea or gruel and have an extra blanket thrown over her. It is necessary, however, to be careful in the matter of covering, and if she has many covers thrown over her while she has an attack of shivering, the extra blankets must be gradually removed as she gets warmer.

To continue the application of too many blankets for a long time—thus inducing profuse sweating—would debilitate her at a time when she needs all the strength possible for her coming labor.

At the beginning, or indeed at any time during labor, sickness of the stomach may distress the patient, causing her to vomit frequently. However distressing or inconvenient this may be, it is not an unfavorable symptom and should not be meddled with. Nothing can be taken that will settle the stomach, and toddies and other drinks will only add to her discomfort. Sickness of the stomach and vomiting favor the completion of labor by relaxing the soft parts, thus tending to an easier and speedier delivery.

During the first part of labor, when the pains are grinding and infrequent, the patient need not confine herself to the bed, but may walk about the room or sit in a chair, thus consulting her own comfort.

Second Stage of Labor.—After awhile (the period of time differing in different labors) the pains change in character, becoming what is known as "bearing-down pains," and are more regular and frequent. These are true labor pains, and are situated in the back and loins, and are of a dull, deep character, lasting longer than the grinding pains.

If the family physician be within easy reach he need not be summoned, in natural cases, until true labor pains begin, unless the "waters break" prematurely. Whenever the "waters give way" it is necessary to send for medical assistance, as, in most cases, active labor will begin in a short time afterwards.

In some cases, but rarely, the waters may break and the woman go a day or two before labor actually begins.

Towards the close of labor, cramps of the legs and thighs may produce considerable suffering. These cramps are caused by the child's head pressing on the nerves that go to the limbs. But little can be done for the patient's comfort, but occasionally some relief may be had by the patient's changing her position, the nurse, meanwhile, firmly rubbing the affected part with her warm hand, and making decided pressure during the act of rubbing.

In a natural labor but little assistance is needed, and meddlesomeness and over-anxiety on the part of the nurse is to be condemned. The physician himself has but little to do except toward the close of confinement, and even his presence in the room is needed only at intervals. Many patients think that a doctor, by being constantly present and examining them during a pain, can greatly help them and expedite the labor. This is a mistake as applied to an ordinary case. The examinations, after the first, are made only to ascertain the progress of the case, and hence need not be frequent. It is much less embarrassing and annoying to the patient if the physician be most of the time in an adjoining room within easy call, instead of being constantly at her bedside. After a thorough examination, by means of which he recognizes the condition of the patient, the progress of the case and the part of the child that presents, he has but little to do until towards the close of the labor.

These remarks apply strictly to natural labor, bearing in mind that a labor may be tedious and yet natural. In difficult or complicated cases, however, the physician will have much to do, and will necessarily be at the side of the patient most of the time. Under such circumstances the patient should place herself entirely in the hands of her medical attendant and be guided solely by his advice. The duty of the nurse will be to obey the physician, following his directions implicitly. The patient is now in danger, and as the physician has sole charge of the case and is alone responsible for its termination, his orders must be obeyed without protest. He must have the confidence and support of the patient and nurse, as such confidence will tend to strengthen his judgment and nerve his hand to the performance of those acts that are necessary to guard the lives of both mother and child. It will be fortunate indeed if he be a man of much knowledge, correct judgment and great skill, with a stout heart and decision

of character. It will be his duty to detect any change in the progress of the labor which renders it difficult or dangerous; to determine whether nature, if left alone, will bring the case to a safe issue, or whether it is necessary to assist the natural process by artificial means. And in those cases where nature unaided is powerless to complete the labor, and the resources of art must be brought to her aid, he must act promptly and with precision. In some cases moments are precious, and if not properly utilized the lives of two beings may pay the penalty.

A woman that is confined for the first time, after being somewhat advanced in life, will likely have a more lingering and painful labor than she would if she were younger; but her subsequent labors may be as easy and speedy as if she had begun child bearing at an earlier age.

Slow labors may not be dangerous ones; indeed, they are much safer than abnormally quick ones. In the latter the shock is often great, while hemorrhage after delivery is especially liable to occur in labors that are too speedily terminated.

During the second stage of labor the patient can materially aid in the expulsion of the child by "taking a breath" and gently bearing down with her pains. She can brace her feet against a box, or the foot-board, and grasp the hands of an attendant. "Bearing down" with the pains will not increase her suffering and will greatly assist in expelling the child. Towards the close of labor the pain becomes so severe that the patient will frequently utter loud cries with her pain, and no one should direct her to refrain from such cries, as they really seem to give her some relief. She should bear down only when the pain is on her, and cease doing so when it goes off. If, during the last two or three pains, the head of the child is passing too rapidly (before the soft parts of the mother are properly relaxed), there is danger that

those parts may be torn or lacerated, and the physician should direct her not to bear down under such circumstances. This injunction the mother must strictly comply with, in order to avoid serious injury and much subsequent suffering.

The position in which women are placed during labor varies in different countries. In this country they usually lie on the back, which is the most convenient for the attendants and perhaps best for the patient.

Attention must be paid to the bowels, and if they are at all inclined to constipation an injection should be used as soon as labor is threatened. The bladder must be kept empty, a catheter being used for that purpose if necessary. Usually, however, the urine comes from the patient in small quantities and at frequent intervals.

Towards the close of labor, when the pains are severe and long continued (and the head of the child is pressing against the mother's soft parts), the nurse can take a folded napkin and place it against the mother just below the opening of the passage that leads to the womb, and with the palm of the hand make gentle, steady pressure directed slightly upwards. This gives support to the mother and tends in some degree to prevent the tearing of her soft parts.

If no physician be present at the time of the confinement, it becomes necessary that the nurse, or some attendant, should have a clear conception of what *should be done* and what *should not be done.*

The nurse and attendants should understand that in most cases of labor there is but little danger to the mother if nature be left to herself to complete the delivery. Knowing this fact they will be cheerful, calm and hopeful. They should by their actions and conversation inspire the mother with confidence in a safe delivery. No allusion should be made to cases of tedious, difficult, or fatal labors. The mother on her part should banish all fears of danger and

compose her mind in the firm belief that she will go through the ordeal in perfect safety.

When the bearing down pains become strong the patient should take to her bed, having previously arranged her clothing for her confinement, and after taking hold of the hands of an assistant, she will bear down when the pain is on, and cease to do so when it goes off.

When the head of the child emerges through the mother's passages, the nurse should feel for its neck, and if the cord be wrapped around it, she will gently slip it over the child's head. The pains continuing, the shoulders will soon be found ready to pass through the external parts. The pressure with the napkin should be kept up at this stage, as the passage of the child's shoulders not infrequently produces laceration of the mother's soft parts.

When the shoulders are born the nurse should take hold of the child, and without pulling on it at all, raise its head and shoulders upwards and forwards until they nearly touch the mother's abdomen. By this time the hips will be born, and the child can then be taken away from the mother and placed on the bed between her limbs.

Directions for the subsequent management of the child will be found in the next chapter.

Third Stage of Labor.—If there is much hemorrhage soon after the birth of the child, the nurse should place her hand over the mother's womb and make gentle but continuous pressure over that organ. The pressure should be directed backward and slightly downward, the purpose being to bring on contraction of the womb (for a contracted womb rarely bleeds much after delivery), thus aiding the expulsion of the after-birth. Care must be taken not to make this pressure firm enough to give pain to the patient; but it should be kept up until the womb is felt under the hand as a hard, round, well-contracted body.

If, in spite of these efforts, the mother continues to lose a great amount of blood, it will be necessary to remove the after-birth at once in a manner hereafter described; but continued efforts must be made to keep the womb well contracted by making gentle, firm pressure over it with the palm of the hand. In addition to these measures it will be best to take the pillows from under the patient's head, and raise the foot of the bed with bricks or blocks, placed under the posts, the object being to keep her head lower than her body. When flooding occurs after the after-birth has come away, it may be necessary to apply cloths wrung out of cold water (ice water preferred) over the womb, and in severe cases, if ice be handy, a piece, the size of a walnut, can be placed up the external passages, in contact with the mouth of the womb. All these things can be done with safety by an intelligent nurse, and the physician (who should be sent for as soon as it is found that the mother is in danger from flooding) will, on his arrival, find that the nurse has pursued the best course possible for the patient's safety.

In the course of a few minutes, or a half hour after delivery, the patient will be seized with after-pains, and if no physician is expected, it will be the duty of the attendant, in some cases, to aid nature in expelling the after-birth. Usually this should not be attempted until at least a half hour has expired after the birth of the child, and not until the patient has had one or two after-pains. After having waited a proper time, the attendant, on finding that a pain is commencing, takes hold of the cord and wraps it around the first two fingers of the left hand close to the mother's body, and then inserting the first two fingers of the right hand, well oiled, into the mother's passages, gently pushes them up to where the cord is attached to the after-birth, and then with the points of the fingers makes gentle pressure downward and backward on the cord at, or near, its attach-

ment; or, if the fingers come in contact with the after-birth, the pressure should be made on that body. While the nurse is making pressure on the cord, or the after-birth, with the fingers of the right hand, she should also, with the left, make gentle traction downwards on the cord to aid nature in expelling the after-birth. In these manipulations the nurse must exercise the greatest caution not to tear the cord loose from its attachment. The traction should be gently and slowly made, and if an impression is communicated to the nurse's hand, as if the cord is about to become separated from the placenta, she must cease all traction upon it at once and wait until a physician arrives. These efforts to aid nature in expelling the after-birth must cease when the pain goes off, to be repeated, if necessary, when another seizes the patient. If, after assisting nature in this manner during one or two pains, the after-birth does not come away, it will be best to let the patient alone until a physician can be had to take charge of the case. The attendant must bear in mind that no rough handling of the patient is allowable, as her life may thereby be greatly imperiled.

As before stated, if a physician is expected within a reasonable time after the birth of the child, the attendant will content herself, so far as the mother is concerned, by tying the cord and making gentle pressure over the womb.

After the expulsion of the after-birth, it will be proper to dip a folded napkin into hot water, wring it as dry as possible and then sprinkle dilute alcohol, or whiskey, or spirits of camphor, upon it and lay it against the mother's external parts. Then a bandage, consisting of a wide towel or muslin folded, should be closely pinned around the mother's abdomen, after which the clothing on the bed must be changed. A dry, warm comfort, over which a sheet can be placed, must be put under the patient, and she should be left to rest, and, if possible, to secure a good sleep.

At the beginning of labor, the patient's clothing should be drawn up around her chest and shoulders, and a large loose skirt, or folded blanket pinned around her waist, which, after labor is completed, may be taken off, and the clothing pulled down and nicely adjusted around her body. By proceeding in this manner it will be unnecessary to dress the patient soon after labor; a proceeding that is always fatiguing and sometimes dangerous.

After-pains, as a rule, do not follow a first labor, but in subsequent ones they are often annoying and persistent. They are necessary after all labors except the first, and are caused by contraction of the womb to expel clots of blood. They may become so annoying as to require treatment for their moderation, and the physician should be consulted when they are very severe or too long continued. When medical advice cannot be obtained, the nurse may apply flannels wrung out of hot water, and give some warm aromatic drink, as an infusion of ginger, or possibly a dessertspoonful of Godfrey's Cordial. If the patient, on the second or third day after labor, takes a dose of castor oil, or other purgative, the clots which produce the after-pains will usually be expelled while the patient is on the vessel evacuating her bowels, after which the pains will cease.

It not infrequently happens that the perineum of a mother is torn or ruptured during the passage of the child's head or shoulders through her soft parts. The laceration may consist merely of a slight tear of the skin and cellular tissue, or it may involve all the structures between the vagina and the bowel, constituting complete rupture. In severe cases, the physician will, as a rule, make an attempt to repair the injury by drawing the parts together and confining them in position by inserting suitable stitches. The operation, however, is not always successful, and in many cases it is necessary to repeat it after the patient has recovered from the effects of her confinement.

If the laceration has been slight, and does not involve the bowel, the injury is usually repaired by natural means, aided by proper position and good nursing. In such cases the patient's limbs must not be permitted to become widely separated, and to prevent this a bandage should be placed around the hips and thighs, and securely fastened. One of the dangers to be feared from rupture of the perineum, even when the injury is slight, is septicæmia, or blood-poisoning. When arising from this cause, the disease, although usually of a mild form and not dangerous to life, is sufficient to cause the patient a great deal of pain and suffering, and to interfere materially with her recovery from the lying-in state. To prevent the occurrence of septicæmia, which in these cases is produced by absorption of septic and decomposed matters at the point of injury, it is necessary to keep the injured parts as clean as possible by frequently washing them with warm water and afterwards bathing them with dilute alcohol. If the wasting from the womb be offensive and irritating, it will be necessary, once or twice a day, to carefully inject into the vagina enough warm water to wash away the irritating matters. If the bowels are at all constipated, they should be gently moved by the use of some purgative that will produce loose, watery evacuations. For this purpose Epsom salts, Tarrant's Seltzer, or a Seidlitz powder will be proper.

After confinement the patient should be provided with a pleasant, well ventilated room. The air in the room ought to be comfortable, but not too warm, and sudden changes of temperature should be guarded against. In the winter-time, doors communicating with the outside air must be kept closed and ventilation should be secured by slightly dropping a window, or by openings leading into other rooms.

As before stated, when the after-pains are very severe, it may be necessary to give medicine to moderate them.

On the second or third day after confinement it is the custom in many places to give a dose of castor oil to move the bowels. This medicine is very certain in its action, and is usually safe as well as efficient. But if the patient be affected with piles, it is best not to give the castor oil, as it will often increase the suffering from the hemorrhoids. In such cases the nurse can administer a dose of syrup of rhubarb, to which a teaspoonful of Epsom salts (previously dissolved in a little hot water) has been added. A Seidlitz powder, or a dose of Seltzer's Aperient can be substituted if the patient prefers it.

The diet of a lying-in woman should be nutritious and given in sufficient quantities. If a patient is doing well and is without fever, it is not necessary to restrict her diet to slops and such articles as are usually given to sick people. She should have as good food as she has appetite for and can easily digest and assimilate. The nurse should see that the patient passes water as often as every eight hours. Sometimes, after confinement, a woman does not feel the ordinary sensations that attend upon a distended bladder, and if let alone she will permit the bladder to become so enormously distended that it loses its power of emptying itself. If there be much trouble in passing water, which is sometimes the case, the nurse should direct the patient to turn on her face and knees, when she will likely succeed. She must not, however, exhaust herself by vain efforts to empty the bladder ; but if the distention be great, and the patient unable to urinate, a physician must be summoned to draw off the urine with a catheter.

Sometimes, a day or two after labor, severe pains are excited by the presence of gas in the bowels. In such cases the abdomen is greatly distended, and very slight pressure with the hand causes an increase of the pains, while firm pressure gives relief. This condition is best treated by bath-

ing the abdomen with a mixture of turpentine and lard, after which cloths wrung out of hot water can be applied.

The lochia is the discharge that takes place from the birth-passages after confinement. At first it consists principally of blood that oozes from the blood vessels of the womb. It afterwards becomes greenish yellow, and lastly thin and watery. During the first twenty-four hours the discharge is profuse, becoming less in quantity on the second day, and gradually decreasing until it ceases. The duration of the lochia varies, sometimes continuing for weeks in the form of a watery discharge. Occasionally it ceases temporarily when the milk comes into the breast. Usually it will, however, soon re-appear, and need not give rise to any alarm or anxiety. In the absence of fever and inflammation, the cessation of the discharge at an early day is not an indication of danger.

An extremely offensive discharge may be caused by the decomposition of clots of blood in the womb. In such cases an injection of warm water into the vagina should be made to wash away the offensive matter. The injection should be carefully made, and too much force must not be used in throwing the water into the passages. Sometimes the addition of a little alcohol or whiskey to the water is useful.

In very rare cases, owing to a variety of causes, flooding may take place within a few days after confinement. If profuse, these hemorrhages are dangerous, and medical assistance must be obtained without delay. Before the physician arrives the nurse should raise the foot-posts of the bed and remove the pillows from under the patient's head. She should also take a large piece of muslin, fold it into a compress about eight inches square, and dip it into very cold water—ice water, if it be at hand—then, squeezing part of the water out of it, lay it on the lower part of the abdomen over the womb. This should be held in position by a bandage placed around the abdomen and firmly pinned in front.

The length of time that a woman should be confined to her bed after delivery varies according to circumstances. A healthy woman who has had no trouble during or after confinement may sit up in eight or nine days after the birth of her child. If she be weak, and if her previous health has not been good, she had better remain in bed for a week longer. During the period of her confinement to the bed she should change her position frequently. To lie constantly on the back, or in any other one position, invites displacements of the womb. That organ now being large and heavy, and its supports being weak and lacking their natural contractile power, it is unwise to permit it to remain too long in any one position. After a few hours' rest on her back, the patient can change first to one side and then to the other, and occasionally she should lie in a position midway between the side and abdomen. By pursuing this course she will not be as liable to suffer from "falling of the womb" after delivery as would be the case if she were to lie too long at a time in one position.

A woman who has had previous labors, and who has suffered from falling or other displacement of the womb, must remain in bed a much longer time. By doing so, and by placing herself under the treatment of a skillful physician during her lying-in period, she can usually be cured of her uterine trouble. In such cases the length of time that she should remain in bed will depend upon the severity of her disease, and must be settled by her medical attendant.

When a woman insists on getting up before the womb has been reduced in size and weight, and before the ligaments and supports that keep it in place have returned to their normal condition of strength, she only invites an attack of some form of womb trouble that may afflict her during her lifetime, rendering her existence miserable in the extreme.

Sore Nipples.—This is a somewhat frequent and painful affection, to which lying-in women are subject. There are different varieties of it, requiring, to some extent, different kinds of treatment.

In excoriations of the nipple, the outer layer of skin is removed by nursing, leaving the nipple of a light red color, swollen and fissured. Scabs may form, which are pulled off by the child, producing a chapped or ulcerated condition of the part. Sometimes the ulceration continues until half the nipple is destroyed. Under such circumstances the act of sucking is attended with excruciating pain.

After each nursing the nipple should be carefully washed with warm water, dried, and then painted with the compound tincture of benzoin. If the part be very sore, a nipple shield must be used, through which the child may draw the milk.

If considerable ulceration exists the child must be taken from the affected breast for a few days until measures can be taken to cure the disease. The breasts can sometimes be kept sufficiently freed of milk by applying warm sweet oil, and then, with the hand, gently rubbing them from the circumference toward the nipple. This requires patience and a little time. If the milk cannot be removed in this manner, a breast pump, with a large mouth, which will not press on the nipple, can be applied often enough to relieve the over-distended breast. The chapped or ulcerated parts should be frequently dusted with calomel.

At the base of the nipple there is sometimes a crack or fissure which may be very small, and yet cause the greatest suffering when the child nurses. The compound tincture of benzoin should be applied to it several times a day; and if it does not heal under this treatment, it may be necessary once a day to touch it gently with lunar caustic.

Occasionally these affections of the nipple give rise to inflammation and abscess of the breast, one of the most painful and protracted complaints that afflict the lying-in woman.

Abscess of the breast is most liable to occur during the first four weeks after confinement, but it may happen at any time during nursing. In very rare cases an abscess may form in the breast before confinement, and under these circumstances it constitutes a very serious complication of the pregnant state. Under the excessive pain and drain upon the system, the patient rapidly loses flesh, becomes exhausted, and is in no proper condition to undergo the pain and confinement incident to child-birth.

The causes that may produce abscess of the breast are: exposure to cold; inflammation of the nipple, extending to the breasts; a sudden stoppage of the secretion of milk at an early date; obstruction of the milk ducts; various injuries, and possibly shock to the nervous system from fright, etc.

There are three varieties of abscess of the breast, depending upon the situation of the disease.

In the first form, the disease is situated in the tissue above the milk-gland, and under the skin; *in the second,* the milk-gland itself is the seat of the trouble; and *in the third form,* the disease is situated below the gland, and between it and the walls of the chest.

In the first form, which is the simplest, the disease is not deep-seated, and hence recovery takes place much sooner than when the gland, or the tissues below it, are affected. Ordinarily the abscess is ready to be opened in eight or ten days from the beginning of the attack, after which the parts soon heal.

In the second, or glandular form, the disease runs a more protracted course; one lobule after another becomes inflamed, producing abscesses in different parts of the breast. Owing

to the number of abscesses that usually form in this variety, the disease may last from one to three months.

In the third form, where the disease is deep-seated, being below the milk-gland, the condition of the diseased structures is hard to determine until suppuration has taken place. The matter is not limited to a small space, as in the first form, but is scattered over a considerable area. If not evacuated by the knife, it slowly finds its way to the surface by different channels, causing, in some cases, fistulæ which are hard to heal. In many cases of this kind, recovery will not take place for two or three months after the beginning of the disease.

In abscess of the breast, where the milk-ducts are involved in the ulcerative process or have been divided by the knife, the matter will be mixed with milk, and the milk may continue to flow from the openings even after the matter has ceased.

Treatment.—Abscess of the breast is such a painful and protracted disease that a physician should be called in every case. The nurse, however, by being properly instructed, can add much to the patient's comfort, as well as aid materially in her recovery. In the very earliest stage of the first (or superficial) form of abscess—say, twenty-four hours from the beginning—the application of tincture of iodine to the skin, over the seat of inflammation, may prevent the formation of matter. After the inflammation has advanced, however, beyond the first day, the iodine will likely do no good. For the relief of pain and over-distention of the vessels of the breast, a warm, moist poultice (not too heavy) should be used. The flaxseed meal, or slippery elm poultice is perhaps the best. It should be re-applied often and be kept warm and moist. If preferred, cloths wrung out of hot water may be used in place of the poultice. There must be no rubbing of the breasts with salves or liniments, as such

treatment would do no good and would increase the inflammation. As soon as matter has formed, it should not be allowed to ulcerate through the skin and open spontaneously, but, as early as possible, the knife should be used, so as to thoroughly empty the abscess.

In the second, or glandular form of the disease, the milk ducts are usually engorged and obstructed. The child should be taken from the mother, and if the breast contains too much milk, giving rise to over-distention and pain, it can be emptied by applying warm sweet oil and gently rubbing it from the circumference towards the nipple. If the milk is not easily pressed out of the breast in this manner, the application, for a few minutes, of cloths wrung out of hot water will usually overcome the difficulty.

In the third, or deep-seated form of the disease, there must be no rubbing of the breast or other interference that may cause pain or increase the inflammation. The nurse can do but little in this variety of abscess, except that by the application of cloths wrung out of hot water, she may aid in relieving pain to some extent until the arrival of a physician, whose presence will relieve her of further responsibility.

The medicines and operative procedures required in the management of abscess of the breast have not been alluded to, for the reason that they are matters that belong solely to the jurisdiction of the physician, and can be of but little interest to the mother or nurse, for whose benefit this book is written.

Milk Fever.—The secretion of milk is not, ordinarily, attended with any appreciable fever. Sometimes, however, in about forty-eight hours after confinement, a woman may be attacked with milk fever, or, as it is often called, "the weed."

The disease usually lasts from twenty-four to forty-eight hours, when the fever subsides and the patient becomes con-

valescent unless there is some inflammatory complication. If it continues for three or four days (which is sometimes the case) the probabilities are that it is attended with inflammation of some organ, or else that there is a malarial element present, which will require the administration of quinine for its cure.

The symptoms of milk fever are headache, a flushed face, a furred tongue, thirst and loss of appetite, heat and dryness of the skin, and a swollen and tender breast. The attack is often ushered in by slight shiverings, and after it is fully developed the skin loses its dry character and becomes bathed in a profuse perspiration. During an attack of milk fever, the flow, or lochia, may be diminished in quantity, or cease altogether, for a few hours, after which it returns in its usual quantity.

In the treatment of milk-fever, attention should be given to the bowels, and if they have not been freely moved, a dose of Epsom salts, or Tarrant's Seltzer powder can be given. A teaspoonful of sweet spirits of nitre, in a half wineglass of water, every two hours will moderate the severity of the fever.

If the patient is sleepless, or if the nervous irritability is great, a dose of Dover's powder may be given to produce rest and a quiet sleep.

The breasts should be gently rubbed, from the circumference towards the nipple, with warm sweet oil every two or three hours until the pain and distention have subsided. They should also be sufficiently emptied by being drawn either by the child or by a breast-pump.

In cases where the child is still-born, or dies before it has been put to the breast, the milk should be dried up as soon as possible. This is best accomplished by refraining from all attempts to empty the breasts. No matter how swollen or painful they may be, if no efforts are made to draw the

milk from them, the swelling and tenderness will subside in a few days without the formation of an abscess.

As the breasts become swollen and tender, they should be gently bathed with warm sweet oil—taking care not to rub them—after which they can be covered with warm cotton batting.

The patient should, at the same time, drink but little, and the food should be of a light character and partaken of in small quantities.

Constipation must be overcome by mild laxatives, such as Epsom salts, or Tarrant's Seltzer powder.

CHAPTER III.

Attention to the Child soon after Birth.

AFTER the child has been born and its connection with its mother has been severed by tying and cutting the cord, it should be carefully handed to the nurse, who will proceed to wash and dress it.

If no physician be present, the nurse will have to give attention to both mother and child; and to aid her in doing so, the following directions are given:

As soon as the child has passed from its mother the nurse will place it in a comfortable position in the bed, between the mother's limbs if she be lying on her back. The infant should then be carefully examined, and if the cord be around its neck it should be slipped gently and carefully over its head, to enable it to breathe without difficulty. Sometimes the cord is so short that it cannot be passed over the child's head without tearing it loose either from the child or the after-birth. In such cases the nurse will take hold of it at some convenient place, raise it up, and putting a strong string or small tape around it in two places, an inch apart, tie it tightly and divide it half way between the knots. If at this time the cord is tied and divided in this manner, it will be unnecessary to tie it again before dressing the infant. About two inches from the child's body is the proper place to tie the cord, unless at that point there is a bleb or blister, in which case the ligature should be placed further from the abdomen.

Small tape is very convenient for tying the cord; but if none can be had, a ligature can be made by taking six or eight strands of No. 20 spool thread, which should be twisted hard and then doubled; or, if the thread is not convenient, twine, such as is used in tying small store-packages, will do. This, after being twisted and doubled, will be large enough to prevent any cutting into the tissues. The ligature should be drawn as tight as can well be done by the fingers.

Occasionally the child, when born, is of a bluish or livid color, owing to a deficiency of air in its lungs. In such cases free exposure of its mouth to the air and sprinkling a few drops of cold water on its face will usually aid in restoring its lungs to a healthy action. In some severe cases it is necessary to temporarily remove the ligature from the cord, so that it may bleed; but this should be done only by a physician.

After the cord has been properly tied and cut, the child should be enveloped in a soft blanket, or other suitable article, and given to the nurse with directions to wash it.

Attention should be paid to the cut surface of the cord, and if it be bleeding it must be again tied by placing the ligature a little nearer the child's body than before.

Sometimes a child is born with its throat filled with mucus that interferes with respiration, causing the mother a great deal of anxiety. The nurse can, by inserting a finger carefully and quickly into the child's mouth, well back, remove any loose shreds of mucus that may be in the throat. In addition to this the child should swallow a teaspoonful of tepid water to which a little sugar has been added. The water, when swallowed, will likely take any remaining mucus with it into the stomach, thus relieving the child's breathing.

Children are sometimes born with what is known as *cyanosis*, or *blue disease*. Not only are they livid at the time of

their birth, but this condition keeps up for a long time afterwards. Usually the color of the skin varies, sometimes being dark and at others clearing up to a certain extent, the child becoming more natural in appearance.

This is a grave disease, and most children who suffer from it die soon after birth. A few, however, recover, and recovery can be aided to some extent by judicious management. The disease is due to non-closure of the opening between the two sides of the heart, thus letting the dark blood from the right side flow into the left side before it has been carried to the lungs and oxidized, or made red.

In all such cases the nurse should be instructed to lay the child on its right side and keep it in that position. If it can be kept alive for several days, there is a chance that the opening between the two sides of the heart may be closed, after which there will be no further trouble. When death occurs in these cases, it is owing to the poisoning of the brain and nervous system by the impure blood; and the end is preceded by convulsions.

The nurse, having carefully examined the child's body to see that no malformations exist, will proceed at once to wash it. In doing this, water at blood heat, and a very soft sponge, or a soft, well-worn muslin rag, should be used. A lather made of castile soap and warm soft water should be applied over a part of the child's body, and after being gently rubbed in, it should be removed with a soft rag dipped in warm water. The part thus cleansed must be thoroughly dried and covered before exposing another part of the child.

The child has not been used to being in contact with the air, and the evaporation going on from a wet surface, in a room much cooler than the mother's body, may produce serious results. Indeed, much of the discomfort and sickness in infants, soon after birth, *is due to the injudicious and cruel*

methods adopted at the first washing. The room must be warm, with no current of air passing through it, and but a small part of the body must be exposed at one time.

Sometimes a great part of the infant's body is covered with a slippery, cheesy matter that is very hard to remove. In such cases it will be well to apply a small portion of fresh lard to the part so covered, and, after rubbing it well with the fingers, use the lather with a soft rag or sponge to gently wash it away. A little patience, and a great deal of gentleness and care in manipulations, will enable the nurse to cleanse the body without irritating the child's tender skin.

The washing should be done quickly, so that the child can be clothed without delay; and under no circumstances should it be allowed to become even chilled. If there be much cheesy matter adhering closely to the skin, it may be best to remove a part only, leaving the remainder to be dealt with at a subsequent washing. Protracted washing, or harsh rubbing, of an infant's tender skin must not be permitted.

The dressing of a young infant should be conducted with a great deal of gentleness and care; and while sufficient time must be taken to see that the clothing is properly adjusted, and is not too tight at any point, the operation should be completed as soon as possible.

To dress the cord, take a piece of well-worn muslin, or linen, about four inches square; cut a hole in the centre large enough to admit the cord. Then pass the cord through the opening in the centre and turn it up towards the child's face. This will leave the upper half of the muslin under the cord and the lower half below it. Now fold the lower half upwards; then turn the two thicknesses that lay to the right of the cord over and upon it; then do the same with the two thicknesses that lay to the left. In this manner the cord will be neatly enveloped in the soft muslin cloth—one thickness

being between it and the child's body, and the other thicknesses on the top. The cord now lying on the child's body, in an upward direction, is confined there by the belly-band, which is placed over it, and fastened on the back of the child. Some nurses will insist on burning a hole in the rag through which the cord is passed. Such procedure is useless; but as it is as good as cutting the hole, no objection need be raised to the indulgence of such whims.

The belly-band should be of soft canton-flannel, about eighteen inches long and three or four inches wide, and must be applied loose enough to permit the nurse to insert two or three fingers under it with ease, so as to allow for the subsequent swelling of the bowels.

I have seen cases where the belly-band was applied so tight that upon its removal two or three days after the first dressing, there was a depression the size and shape of the constricting belly-band.

After the belly-band has been properly adjusted, the nurse will proceed to clothe the child. Before dressing it she should carefully examine all its parts for deformities, and if she supposes any to exist, it is her duty to promptly inform the physician.

The clothing must be loose at all points, and that which is applied next to the skin must be of soft warm material. For this purpose a good article of canton-flannel is perhaps the best.

In cold weather the outer garments can be made of fine woollen flannel.

After the child has been dressed it should be laid upon a soft pillow and allowed to sleep, to enable it to recover from its fatigue. It will often sleep for several hours, and in this it ought not to be disturbed. If it cries to any considerable extent, an examination should be made to ascertain if any pins be sticking it, or if the clothing be too tight at any

point. If nothing wrong is detected, it will be best to put it to the mother's breast in order that it may draw from it some of the thin secretion that is usually found there soon after child-birth. An early application to the breast is beneficial to both mother and child. In women who have previously borne children, it may cause an increase of after-pains, but such pains are necessary to expel clots from the womb. The child should not be permitted to take the breast too often if there is not much milk in it, as needless sucking may produce soreness of the nipples, attended with much pain and suffering.

The early application of the child to the breast will also hasten the secretion of the milk, while the thin fluid that already exists in it will act beneficially as a purgative upon the child. It is just at this stage of infantile life that the foundation is often laid for much subsequent suffering and danger. The temptation to feed the baby with some of the abominable teas and compounds recommended by meddlesome persons seems impossible to overcome. In the early periods of infancy the child usually needs nothing but what is contained in its mother's breast. In fact, it is able to digest but little else, and, when through ignorance, its delicate stomach is crowded with other articles, the innocent babe will pay dearly for the officiousness of the nurse. Colic soon follows as the result of early over-feeding and dosing, the child being doomed to days and months of suffering.

On a par with injudicious early feeding is the barbarous custom of dosing the infant with drugs. I have known nurses, on their own responsibility, to administer to new-born babes laudanum, soothing syrup, paregoric, sweet oil, castor oil, spirits of camphor, and similar articles. Many infants succumb to such treatment, and the wonder is that so few are destroyed by these drugs when ignorantly given. When it is possible to consult a physician no medicines

should be given except upon his recommendation. Although cases do occur where an active drug is indicated, yet they are extremely rare, and the rule should be established, seldom to be departed from by the nurse, to give very young infants no medicines of a perturbating character. If the child seems to be suffering greatly, as manifested by long-continued spells of crying, a careful, intelligent physician will usually be able to detect the cause and relieve the child without resorting to the use of dangerous medicines.

The child should not be put to the breast oftener than every two hours during the day, and at night it will not be necessary to give it the breast oftener than every three or four hours. Too frequent nursing is particularly injurious to the mother, depriving her of needed rest and producing nervous exhaustion. It will be well to dry the nipple with a soft cloth after each nursing, and the child's mouth should be well washed several times a day with tepid water, to which has been added a small quantity of alcohol. If these measures be neglected, the nipples will likely become sore and painful, and the child will be liable to that troublesome disease known as thrush. It is not probable that a nursing child would ever suffer from thrush if careful attention were paid to the washing of its mouth and of the mother's nipples.

It sometimes happens, however, that for two or three days after child-birth there is no milk in the mother's breast. In such cases it will be necessary to give the infant some artificial nourishment. No artificial food should ever be given to a child inside of twelve hours after birth, and, indeed, it would in most cases be better to wait for twenty-four hours before feeding it.

The stomach of the infant is weak and unable to digest artificial food, and anything of the kind given it too soon after birth will cause pain and sickness. But if the mother's breast contains no fluid whatever within one or two days

after child-birth, it will then be necessary to prepare some artificial nourishment for the child.

The proper kind of artificial food to give a new-born child, and the method of its administration, is treated of in the article on "Feeding," to which the reader is referred.

As soon as the mother's breasts contain milk, the artificial diet must be withdrawn and the child placed to the breast. In feeding infants artificially a nursing bottle should be used. It is natural for the child to suck, and after sucking the bottle a few days, it will take the mother's nipple better than it would if previously fed with a spoon. It is best to dispense with the long tubes and use a bottle with a nipple fixed on a short neck. But if a bottle with a long tube is used, the tube as well as the bottle must be soaked in strong soda water, and afterwards thoroughly rinsed in clear warm water as soon as the child has had its meal.

Still-born Children.—A child may be born apparently dead (still-born), requiring immediate and active efforts to establish respiration. It may also be suffering from certain injuries, the result of difficult and protracted labors. If a physician be not present, the nurse should do all in her power to relieve the little sufferer. A child that is still-born gives but little signs of life at birth, and to a common observer it appears to be quite dead. If, however, it be really alive, or in a condition to be restored to life, the heart will be found beating, although most likely so feebly that none but a medical man can detect the heart throbs.

Therefore the nurse, in the absence of a physician, should act upon the presumption that every child born at or near full term, even if badly asphyxiated, can, unless signs of decomposition are present, be restored to life if proper measures are promptly taken to bring about such a result. The cord should be carefully examined, and if there be no pulsation, or beating, felt in it, the nurse should at once tie and di-

vide it in the manner heretofore described. She should then take the infant, and wrapping it in warm flannel, place it on its back on a table or other article near the fire, and after removing the mucus from its mouth, she should carefully wipe its lips. After slightly elevating the child's head by placing something under it, the nurse should then close its nostrils by pressing them together with the thumb and forefinger of one hand, while the other is placed over the child's stomach, making pressure to prevent air from passing into that organ. The nurse should then place her lips close to those of the child, and blow her breath into its mouth. When the child's lungs have been distended in this manner the nurse should gently compress its chest with her hands, so as to force the air out. This operation of inflating the lungs and compressing the chest must be repeated again and again until natural respiration takes place, or until, after long-continued and unremitting efforts to restore breathing, there are no indications of success. While the nurse is engaged in these efforts, others can aid in the restoration of the child by gently rubbing its legs upwards with their warm hands.

If the entrance to the windpipe be closed by the tongue being drawn backwards against the roof of the mouth, the nurse can, with a finger placed well back upon the tongue, draw it forwards so as to permit the air to enter the lungs. If this method proves unsuccessful, after a fair trial, the child should be placed in a warm bath for a few moments, the artificial respiration being kept up at the same time.

After natural respiration has been established, it will be quite feeble, and to increase the force of its breathing, the nurse should place the child in a warm bath up to its neck, and then sprinkle cold water upon its head and face. This usually causes it to gasp, when its lungs will become fully inflated with air.

When the child is born apparently dead and, on examination, the cord is found to be pulsating, or beating, it should not be divided ; but for the time being the child should be left attached to the mother. With her finger covered with a fold of a handkerchief, the nurse must remove any mucus that may be in the child's throat, so as to admit of the free passage of air into its lungs. Cold water should then be sprinkled on the child's face, and its breast slapped with the nurse's hand, which has previously been dipped into cold water. This will often cause the child to gasp, and thus fill its lungs with air. If these means are but partially successful, attempts should be made for a short time to establish respiration by the nurse applying her mouth to that of the child, and filling its lungs as before directed, without, however, removing it from the mother. Assistance can be given by rubbing the chest, legs, and feet with warm spirits, and by tickling the back of the throat with a feather dipped in brandy or whiskey. If all these measures fail, and the beating, or pulsation, in the cord has ceased, the nurse will remove the child from the mother by tying and cutting the cord. She will then proceed to practice artificial respiration in the manner before described.

Sometimes, in cases that seem to be hopeless, a continuance of the above methods will in the end prove successful. The nurse must not, therefore, be too easily discouraged, but should continue her efforts as long as there is the least hope of succeeding.

A child may *not pass water* for a day or two after birth, thus causing great anxiety to the mother. If there is no malformation of the parts the trouble can usually be corrected by placing the infant in a warm-water bath, and making gentle pressure with the palm of the hand over the lower part of the abdomen. The nurse should carefully watch the child while it is in the bath, to see whether it passes water. Oc-

casionally the kidneys are tardy in secreting urine, and the child does not pass any because there is none in the bladder. To stimulate the kidneys in these cases, four or five drops of sweet spirits of nitre, in a teaspoonful of melon-seed tea, can be given two or three times a day.

Sometimes a young babe's *bowels are obstinately constipated*, causing pain and fretfulness. To relieve the trouble the nurse can use a piece of castile soap, the shape of the little finger and about half that size. This can be gently insinuated into the bowel and held there until it causes the child to strain, when the soap will be pushed out, followed by an evacuation of the bowels. If this method should fail, or if not convenient to use it, an injection of a half-cupful of warm water, to which a teaspoonful of melted lard has been added, may be used.

A child may suffer from *inflammation of the breasts* soon after birth, they becoming swollen, hard, painful, and containing a fluid somewhat resembling milk. All that is necessary in simple cases, where the breast is merely enlarged, is to rub it gently with warm sweet oil. If there is much inflammation, with redness, pain and great swelling, a warm, moist poultice can be used until the inflammation and redness disappear, after which the breast can be bathed with sweet oil. No attempt should be made to squeeze out the milk or otherwise handle the breast roughly, as by so doing a high grade of inflammation, ending in abscess, may be excited.

As a result of pressure, during difficult and painful labors, children are sometimes born with the *shape of the head greatly altered*, being elongated. No special attention is required in such cases, as the head soon returns to its natural shape without any treatment whatever.

Swellings upon the head of a new-born child are common, due also to pressure during birth. Occasional bathing with

whiskey or alcohol and water will assist in promoting absorption, and it is rare that any other treatment is needed.

A child may be *born tongue-tied*, and if it seriously interferes with nursing, it may be necessary to remedy the defect by an operation. In most cases the deformity causes but little inconvenience and requires no special treatment. If, however, the tongue is bound down by the bridle so near its end that the child cannot nurse without great trouble, causing a clucking sound when it attempts to draw milk from the breast, an operation is necessary. The operation consists in dividing the bridle with a pair of sharp scissors, and should be attempted only by a physician, for, if unskillfully performed, troublesome hemorrhage might result.

Inflammation of the eyes may attack an infant soon after birth, and if not properly treated, the disease is liable to produce permanent impairment of sight. In another part of this book a separate article is devoted to this disease, to which the reader is referred.

Ulceration of the Cord.—The cord usually separates from the navel in from five to ten days after birth. In most cases the navel is left in a healthy condition, and soon heals without trouble. This, however, is not always the case, for instead of presenting a healthy surface it may be the seat of what is called "proud flesh," and be slow in healing.

An astringent powder, such as alum or tannin, can be sprinkled on the diseased surface two or three times a day, and the parts afterwards dressed with calomel ointment.

In neglected cases, during warm weather, maggots are liable to get into the sore, causing a great deal of pain as well as trouble in getting rid of them.

The treatment consists in keeping the parts clean by bathing with warm water, to which a few drops of alcohol have been added. The maggots that are within sight should be

carefully removed and the sore wet with the following mixture: Take ten drops of carbolic acid and dissolve it in a teaspoonful of glycerine; add this to two large tablespoonfuls of water. After wetting the sore with this mixture, it can be dressed with the calomel ointment. The application can be made two or three times a day until the parts are healed.

Bleeding from the navel may happen when the cord separates, or soon afterwards. If it be so profuse as to threaten life the nurse should make pressure with the point of her finger until a physician can be summoned. If the pressure does not arrest the bleeding, a small bit of sponge may be dipped in strong alum water, and then rolled in tannin and applied to the navel. Pressure should then be made upon the sponge with the point of the finger. Sometimes the bleeding consists of a mere oozing of blood from large red granulations that spring from the sore. The bleeding can usually be controlled by covering the parts with tannin or powdered alum or some other astringent. If these measures fail, recourse must be had to pressure made as above directed.

Children sometimes become *jaundiced* soon after birth, causing great anxiety and alarm to the mother. In most cases the disease disappears spontaneously, but occasionally it may prove somewhat serious, and require the attention of a physician. The reader is referred to the article on jaundice for further information.

Infants often suffer from *chafings* situated about the flexures of the joints and the buttocks. The treatment consists in keeping the parts thoroughly cleansed with warm water, and using a wash composed of a tablespoonful of alcohol to a pint of water. When dried the parts can be dusted with the precipitated carbonate of zinc, or else dressed with the oxide of zinc ointment.

CHAPTER IV.

Accidents and Diseases Occurring at or soon after Birth.

PREMATURE INFANTS.

CHILDREN prematurely born are so weak and feeble as to require a great deal of care and good management to keep them from perishing soon after birth. They breathe badly, and many of them will not at first nurse their mother's breast; their organs are not well developed, and perform their functions imperfectly. They do not seem to have the strength to suck and swallow, the muscles of the tongue, cheeks and throat being too weak to perform these acts.

That they may have a chance to live, it is necessary to keep them warm and give them a sufficient amount of nourishment.

To accomplish the first object, a hatching-cradle has been used in France. It consists essentially of a box, properly ventilated, and so arranged that the air in it can be kept warm (about 77°) by means of jugs containing hot water.

Any contrivance that will raise the temperature around the infant, while permitting it to breathe good, pure air, will serve the purpose. In an extreme case that once came under my own observation, I put the infant, thoroughly wrapped in flannel, into the oven of a common cooking-stove, and kept the heat of the stove regulated at about 77°. Of course the

doors of the oven were kept wide open, and a large sponge, wet with water, so as to give off a sufficient amount of moisture, was laid in the oven. If the case is so desperate as to require the adoption of such measures, the time and attention of one intelligent person must be constantly given to the proper regulation of the heat, as otherwise the most serious consequences might result. Of course, a thermometer is indispensable to test the temperature around the child at frequent intervals.

Children that are born prematurely are too feeble to be washed soon after birth. They can be placed in a warm-water bath, and while in the water the nurse can gently rub those portions of the body that are foul, after which the child should be quickly dried and enveloped in warm flannel. Constant attention must be given to keeping the body warm until the child's strength is sufficiently restored; otherwise the depressing effects of cold will destroy what little vitality its system contains.

In most cases, frequently wrapping it in warm flannels, and laying it in bed beside its mother, will be sufficient. A thick flannel blanket should be laid on the bed, upon which the infant, with its flannel wraps, is placed. The temperature of the room should be made comfortable; but on the mother's account it must not be too warm. About 70° is perhaps the proper temperature under such circumstances.

The child must be put to the breast soon after birth, and every effort should be made to get it to take the mother's milk.

If it be too weak to suck, the nipple should be squeezed and the milk forced into its mouth, or else some can be milked into a spoon and the child fed in this manner. If no milk can be obtained from the mother's breast, the ordinary mixture of one part of cow's milk to three parts of water, or the condensed milk—one part to twenty-two of water—can be used. If the child is very small and weak,

only about a dessertspoonful of the mixture should be given at a time, but it should be fed this quantity every hour or two. Larger children will, of course, require larger quantities. Sometimes it is impossible to get the infant to swallow the milk, and it may be necessary to feed it through a tube introduced into the stomach. If vomiting occurs after feeding, no matter how the milk is introduced into the stomach, it will be best to decrease the quantity, as no more should be given at a time than can be retained. If diarrhœa occurs, showing that the food is not agreeing with the child, it will be necessary to make a change and select such form of nourishment as is found to be best adapted to the child's digestion.

By proceeding cautiously in this manner many children will continue to thrive, and in a short time become as strong as if born at full term. Others, however, will remain small and delicate, requiring some years to outgrow the feebleness that characterized them at birth. Yet, with good care and management, such children may outgrow their infirmity and in adult life become as large and strong as if they had been well-developed at birth.

Suffocation of Children in Bed.

Suffocation of children in bed, or overlying, usually happens during the mother's sleep while her child is nursing. After sucking the breast until it is satisfied, it loses the nipple and buries its face close against its mother's body or a pillow, or the bed-clothes, thus cutting off all chance of getting air into the lungs. It has neither the sense nor strength to move its face around on the bed until it can get sufficient air to fill its lungs, and therefore smothers to death beside its mother.

To prevent this accident some have advised that the child should not be permitted to sleep with its mother, but should

be placed in a crib by the side of her bed. But in early life an infant has but little vitality and requires to be kept very warm. It is best, therefore, that it should rest beside its mother for the first two months. If the mother exercises due care, there is but little danger that her child will be smothered in bed. She should never go to sleep while her child is nursing, but should wait until it has finished its meal, and then carefully place it in a position where it will have plenty of room to breathe. No pillow, or fold of bed-clothes, should be permitted to be near its face, and if the mother turns over during the night, she must have her child's welfare so impressed upon her mind that she will not get too near it. The bed should be roomy enough to permit the child's face to be placed at some distance from the mother's body.

DEFORMITIES.

Various kinds of deformities are met with in new-born children, which should not be neglected, as many of them are more easily removed in early life than after the child has attained to the age of puberty. Such cases should, therefore, at an early day be placed in charge of a physician for treatment.

Mother's marks are sometimes seen on the bodies of young infants. They may be of a bright red color or of a dark, livid hue, the color depending upon the character of the blood contained in them. The name is sometimes applied to moles and other small tumors. The scarlet form of mother's marks may be quite extensive, spreading over a large portion of skin. When this is the case, great care should be taken to prevent the child from injuring the part, as a wound inflicted by a knife or other sharp instrument would cause troublesome bleeding. These marks usually do not increase in size after birth; indeed, many of them, when limited in extent and not deep-seated, disappear

as the child grows older. But if they are deep-seated, or are of large size, and especially if they are situated on the face or other exposed parts of the body, the advice of a surgeon should be obtained, as it may be necessary to resort to operative measures to relieve the child of the disfigurement.

It is a popular belief that these marks are produced by strong mental impressions made on the mother's mind while she is pregnant. In rare cases this may be true, but instances of the kind do not often occur, and most cases of mother's mark are due to other causes. What those causes are we do not at present understand.

Hare-lip consists of fissures of the upper lip, causing an unsightly deformity. Usually there is but one fissure, which in most cases is situated on the left side. Sometimes there are two, one on the right and the other on the left side, leaving a portion of lip between them. The deformity may consist of fissures involving the lower portion of the lip only, or they may extend up into the nose. In addition to the fissures of the soft parts, the bones beneath may also be cleft, and this cleft may be limited to that portion of the jaw where the teeth are inserted, or it may extend throughout the whole of the roof of the mouth, reaching back to the throat. Occasionally, though seldom, the bone may be divided by a fissure without there being any cleft in the lip.

Not only does hare-lip produce an unsightly deformity, but it also seriously interferes with nursing, swallowing, and later on with articulation. It is therefore desirable that the deformity be remedied by an operation as early as it can be done with safety. Surgeons differ as to the proper time for performing the operation. Some contend that it should be done very soon after birth—from the third to the sixth week—while others would wait till the child has finished cutting its teeth. The operation cannot be performed, with any show of success, while the infant is at the breast; hence,

if an early attempt be made to close the fissure, the child must be weaned. No operation should be attempted while the child is cutting its teeth; and therefore, all things considered, it is probably best that operative measures should be deferred until the child is two or three years old.

The operation is a delicate one, and requires great skill and judgment on the part of the surgeon. If the case be a simple one and not attended with much deformity, and the surgeon is careful to trim the fissures in a proper manner, the scar or deformity left after the operation will be slight, and the child will escape much disfigurement. In bad cases, however, the results will not be so satisfactory.

Children are occasionally born with *club feet*. Usually but one foot is affected, but sometimes both are deformed. There are several varieties of club foot, some being much harder to cure than others. The deformity caused by club feet is very great; besides, locomotion is sadly interfered with. It is, therefore, doubly important that the child should be cured of its defect; and it should be done at as early a period as possible, as it is much more easily remedied in a child than in a grown person.

It being easier to restore bones to their natural position in children than in adults, it follows that in early childhood cases may be cured by mechanical appliances alone that, in adult life, would require the employment of the knife to divide tendons and other structures.

If the infant be healthy, the surgeon can commence the treatment by suitable mechanical appliances at the end of the second month. In bad cases, it may be necessary to begin the treatment by dividing one or more tendons with the knife, even in very young infants.

Closure of the Bowel.—Occasionally a child is born without any opening from the lower part of the bowel. Of course, unless relief is obtained soon, the child cannot live long; and

hence the physician's attention should be directed to the defect without delay. Sometimes the trouble is caused merely by a thin skin growing over the parts. When this is the case, relief is easily afforded by dividing the skin at the point where a bulging occurs when the child strains in an effort to evacuate the bowels. In other cases the bowel terminates higher up, and it is necessary to cut through from a half inch to an inch of tissue before reaching the bowel. One case of this kind came under my own observation. Sometimes the bowel terminates by an opening into the bladder, and the matter from the bowels flows through the urethra mixed with urine. Such cases are hopeless, the child dying in a few days after birth.

The urethra may be closed in a new-born infant, and as a consequence the urine cannot flow out of the bladder. The urethra (the canal leading from the bladder outwardly, through which the urine passes) is closed at some point of its course, and in some cases no external opening can be seen. Sometimes the urethra is perfectly formed for two inches or more from the bladder, and a minute opening can be discovered by a careful inspection of the skin on the lower surface of the penis, which, on being enlarged, permits the urine to flow without much difficulty.

Film Growing Over the Eyes.—In very rare instances children are born with a thin film of skin growing over the orbits, entirely concealing both eyes. Such children are spoken of by non-professional persons as having been born without eyes, yet this is a mistake. The eyes occupy their usual position, but a layer of skin has grown over them, hiding them from view. In such cases a physician can sometimes remedy the defect by carefully removing the superabundant skin by operative procedure.

Bowed legs may exist in various degrees, some cases presenting very slight curvature, while in others the deformity

is so great as to require long and continuous treatment for its correction. If the bend in the legs of a young child be slight, no special treatment need be adopted, as it will outgrow the deformity before adult age. But if the deformity is great the patient must be placed in charge of a surgeon for proper treatment.

Spina bifida is caused by a malformation of the spinal column in some part of its course. A fissure or cleft in the bone permits of the protrusion of the membranes covering the spinal cord, which, as they bulge outwards, form a sack at some part of the spine. The sack, being filled with water, gives a feeling of fluctuation, and by firm pressure it can be diminished in size, and in some cases emptied. As soon, however, as the pressure is withdrawn the sack begins to refill. Ordinarily the membranes of the cord, which constitute the walls of the sack, are covered with a thin skin; but sometimes the skin is wanting, when the sack is plainly seen as it passes through the opening formed by the absence of skin and other tissues.

The tumor may be quite small at first, but soon increases in size, becoming as large, in some cases, as the child's head. The size and shape of the tumor will depend to a great extent upon the amount of deficiency that exists in the bones of the spinal column.

Death nearly always takes place in a short time after the birth of children affected with *spina bifida*, being usually preceded by convulsions. Rupture of the sack from ulceration, and escape of its contents, is quickly followed by death.

The treatment of this deformity is very unsatisfactory. When the tumor is small, gentle and continuous pressure has been tried, but without much success. Small subcutaneous punctures, to drain the sack of its contents, have been made, with results not encouraging.

hernia, or rupture, at birth.

If the inguinal canal is not closed before birth, the child is liable to suffer from a descent of a portion of the bowel through it, constituting hernia, or rupture.

The swelling, or tumor, is usually small and easily reduced, but occasionally it is of large dimensions.

The treatment consists of reducing the rupture by pressure upon the tumor, and applying a properly constructed pad to keep the bowel from again descending. After the child is a year old it can wear an infant's truss, which, if properly applied and worn, will usually effect a radical cure. While wearing a truss, the tender skin of the infant is liable to become irritated or inflamed. The parts should be frequently bathed in warm water, and a mild ointment afterwards applied.

These cases should be treated only by a competent physician.

jaundice.

The skin of a new-born child is of a vivid red color, which gradually fades, until, in the healthy babe, it becomes of a rose tint. In some cases, within three or four days after birth, the skin loses its red color and assumes a yellowish tinge. The child is really not sick, and but for the peculiar color of the skin it would not cause its mother any uneasiness. Its bowels act naturally, and the urine may or may not be high-colored. The eyes do not become yellow as in true jaundice, and the discharges from the bowels show no absence of bile.

The cause of the trouble is a matter of doubt, though in some cases the exposure of the child to the influence of cold in washing and dressing is sufficient to account for it.

This disease is not of a serious character, and if left to itself will end in recovery in a short time. If, however, the

bowels are costive a small dose of syrup of rhubarb, or castor oil, may be given.

In rare cases, the child may be the subject of true jaundice. If so, the skin assumes a deeper yellowish tinge; the eyes become yellow; the discharges from the bowels are unusually whitish in appearance, showing an absence of bile; the urine is high-colored, giving a yellow or saffron-colored stain to the diaper. The child loses weight, and there are disturbances in the digestive organs.

Careful examination may disclose an enlargement of the liver, the lower border of which can be felt in the abdomen below the ribs, constituting what nurses call "*liver-grown.*"

In the treatment of this form of the disease the child's diet must be carefully attended to. If its milk or food is not agreeing with it a change must be made; the quantity, in most cases being too great, should be reduced to correspond with the inability of the stomach to digest its usual amount of nourishment. Sometimes it is necessary to change the kind of food, selecting an article that is easier of digestion and gives less trouble to the weakened stomach. Warm baths, followed by gentle friction, will be useful. If there be no diarrhœa the syrup of rhubarb, to occasionally move the bowels, will be proper. Four or five drops of the sweet spirits of nitre in a teaspoonful of water or melon-seed tea will have a good effect on the kidneys, stimulating them to action, and thus aiding in the elimination of the coloring matter of the bile from the blood.

INFANTILE LOCK-JAW.

This affection may show itself in a few hours after birth, but often a week elapses before it makes its appearance. It comes on gradually; the first thing usually noticed is that the infant, when placed at the breast, does not take the nipple.

On examination the mouth is found to be closed; the jaws almost so, and firmly locked. Soon after convulsions occur in paroxysms, being ushered in by a shriek. During their continuance the body is livid, the hands are strongly clenched, the feet flexed on the ankles, and the toes drawn inwards, remaining so during the fit; the body is bent backwards, the mouth is slightly open, and the lower jaw is firmly fixed. Even after the fit is over the hands remain clenched, the thumbs drawn into the palm, and the head is drawn backwards. As the disease advances the jaws become quite closed, the lips being firmly compressed against the gums. The child is unable to suck almost from the beginning of the attack.

Death may occur during a fit, or the child may sink into a condition of insensibility or profound sleep, and so expire within twenty-four or thirty-six hours from the commencement of the disease.

The cause of the disease is not well understood; but most likely pressure upon the brain during birth is the most common. In some cases of difficult labor the bones of the child's head are found overlapping each other, the bone at the back of the head being depressed, and those at the sides riding over it at the edges. When this is the case the child should never be laid on the back, but on the side, so as to give the bone a chance to assume its proper position. This, and giving the child an occasional warm-water bath, is about all that the nurse can do in this disease, which is nearly always a fatal one.

Inflammation of the Eyes.

On the third day after birth, sometimes later, a child may be attacked with a severe form of inflammation of the eyes, which, if not properly treated, is liable to cause impairment of sight.

This disease is produced by inoculation in the mother's passages during the birth of the child. Women suffering from severe leucorrhœa, or "whites," at the time of confinement, are liable to inoculate the infant's eyes. When this is the cause, the disease will nearly always be noticed on the third day after birth. In other cases the trouble arises from carelessness and neglect in washing the child. Cloths impregnated with diseased germs from sores or foul discharges are used about the eyes, and the infant in this manner becomes infected.

Nurses often express the opinion that the disease is produced by exposing the child's eyes to a strong light, and are apt to censure the attending physician for permitting too much light in the room after the child is born. There is most likely no foundation for such an opinion; but, of course, the bright light from a lamp or a gas-jet should not be permitted to fall upon the child's eyes.

The symptoms of the disease are swelling of the eyelids, with redness or a livid hue of the skin about the lids, the margins of which stick together closely. When the lids are separated a purulent discharge escapes in great quantities. These acute symptoms may continue for a week or so, when they begin to subside, assuming a milder form, although the discharge from the eyes may last for a much longer period. Both eyes may become diseased at the same time; but usually one is affected two or three days before the other is involved.

When a woman who suffers from leucorrhœa, or whites, is near her confinement, she should use warm water injections morning and night to wash away the acrid discharge; and after each one, while lying on her back, she should inject a mixture of alcohol, one part to eight parts of water. In using these injections the syringe should be fitted with a tube, the perforation in the end of which ought to be closed, so that the fluid will pass out at the side openings only.

Treatment.—After the child's eyes have become inflamed, the most persevering care and attention must be given to the case by the nurse; otherwise total blindness may follow. During the whole progress of the disease pains must be taken to prevent the matter from the diseased eye getting into the sound one; and to do this the child should be laid on the affected side, so that the discharge may escape without running into the healthy eye. The infant's hands should be so confined as to prevent it from inoculating the sound eye with matter carried from the diseased one. All cloths and sponges used about the patient must be carefully taken out of the room and destroyed. The eyes should be kept as free as possible from the discharge, and for this purpose the lids must be carefully separated every hour or two to enable the matter to escape, after which the eye should be bathed with warm water by letting it fall in a small stream from a bit of sponge held just above the head. Sometimes a very small syringe is used to wash the matter from beneath the eyelids. The application of washes and ointments to the eye should be made only by a physician having a knowledge of eye-diseases.

The cornea, or front part of the eye-ball, is liable to become seriously affected in this form of inflammation of the eyes, constituting the principal danger in this disease. Ulcers of the cornea may occur, which in healing leave a scar, or opacity, that interferes with the transmission of light to the retina. Cleanliness, and prompt removal of the discharge from the eye (not permitting it to remain long in contact with the eye-ball), are the best means of avoiding corneal troubles.

COLIC.

As a result of taking too much food at a time, or food of an improper quality, children are subject to indigestion that

often leads to attacks of colic. In very young infants, colic is usually caused by over-nursing; the stomach becoming so much distended as to cause pain. In other cases the mother's milk is not healthy, and the child suffers as much from the quality as from the quantity.

When the child grows older, and is being fed from the table, it is not unusual for it to suffer from acute colic caused by eating some improper article of diet. Food that undergoes fermentation, or decomposition in the stomach and bowels, gives rise to distention of the abdomen with wind, thus producing the severe pain with which the child suffers during an attack of the disease.

Infants that have an occasional attack of colic, caused by over-distention of the stomach with milk, or other diet, may be fat and otherwise healthy; but where the indigestion becomes chronic from persistent over-feeding, or giving improper food, the child's digestive organs are weakened, and it is not able to digest and assimilate enough food to properly nourish the body. In such cases it becomes weak, pale, dull and fretful. Very often the disease is made worse and more protracted by the repeated administration of soothing syrup, paregoric and similar medicines, given to control the pain from which the child suffers.

Improper treatment during the first few days of infantile life may be the foundation for future attacks of colic. The administration of toddy, catnip and other teas, soon after birth, is usually followed by disturbance of the stomach that leads to indigestion.

Treatment.—The first thing necessary to do in the treatment of colic is to see that the child's food is of suitable quality and that it is given in proper quantities. If the child be nursing its mother, the probabilities are that it takes more milk into its stomach than can be properly digested, and measures must be adopted to restrict the amount taken

at each meal. It is a good plan to give the babe a little cold water before it takes the breast, to cool its mouth and allay its thirst, so that it will not be so apt to crowd its stomach with milk. At any rate it must not be permitted to nurse too long at a time, and when the mother thinks it has taken a sufficient quantity of her milk it must be taken from the breast. If it becomes necessary to greatly decrease the amount of milk taken at a time, it may be best to let the child take the breast a little oftener than usual.

In some cases the trouble may be caused by the mother's milk disagreeing with the child, and if so, it should be taken from the breast and fed with such artificial food as may be found to best agree with it.

Children that are being artificially fed may suffer from colic. In such cases the food has been given too often, or too much at a time, or else it is not adapted to the child's system.

The management of such cases consists in giving less food at a time and at proper intervals. If this does not remove the trouble, it will be necessary to change the food and select some article more suitable to the child's wants.

To relieve the pain that attends colic, it will usually be best to give a dose of castor oil with a few drops of paregoric added to it. A teaspoonful of castor oil and five or six drops of paregoric will be sufficient for a very young child. The action of the oil can be hastened by using an injection of a half teacupful of warm water. When the bowels move, a quantity of wind will escape with the discharges, giving relief to the sufferer.

Cloths wrung out of hot water should be placed over the whole of the child's abdomen. These should be frequently changed in order to keep up the effects of the moist heat. If this does not give relief to the pain, the child may be put into a hot bath for a few minutes, after which the hot cloths can be re-applied.

When the pain is excessive, and the above treatment does not give relief, it may be necessary to give the child some preparation containing opium. For this purpose small doses of paregoric, say five to ten drops, in a teaspoonful of water, will be proper. Three or four drops of the essence of peppermint added to the paregoric will increase its efficiency. Usually after taking this medicine the child will belch up considerable wind from the stomach.

When an attack of colic is caused by eating indigestible articles, the first thing to do is to get rid of the offending substances by an emetic, such as ipecac or mustard and water. As soon as this has been accomplished a dose of castor oil, with a few drops of paregoric, should be given to move the bowels. An injection of warm water, shortly after giving the oil, will hasten the action of the purgative.

In rare cases the pain that accompanies inflammation of the bowels may be mistaken for colic, and it is important that the mother should be able to distinguish the symptoms of the two diseases, for the reason that inflammation of the bowels is attended with great danger to life, and calls for prompt medical assistance.

In colic from indigestion, firm pressure on the abdomen does not increase the pain, but rather mitigates it; while in inflammation of the bowels, pressure produces excessive pain, causing the child to scream with agony when the hand is firmly pressed on the belly. In addition to this the pain in inflammation of the bowels is constant, never entirely subsiding, while in colic it is paroxysmal, the child at times being entirely free from it.

If the mother has reason to believe that her child's symptoms proceed from inflammation of the bowels, she should at once send for a physician, as, with the exception of the hot-water bath and hot cloths to the abdomen, the remedies above mentioned are not adapted to the treatment of the latter disease.

INFANTILE ERYSIPELAS.

This disease, although quite rare, is occasionally met with, and is due to a variety of causes. Thus, if a mother has a severe attack of erysipelas at the time of her confinement, she will most likely give birth to a child covered with the erysipelatous rash. Also, when the mother is suffering from child-bed fever there is danger that the child will have erysipelas. Sometimes the disease starts from a sore, such as an unhealed navel, and rapidly spreads over the whole body. In other cases erysipelas may arise from a wound, such as is made by vaccination, or by a burn, or by the application of a blister. Occasionally the disease cannot be traced to infection, or to an injury of any kind, it being a constitutional form of erysipelas.

If the disease be caused by infection from the mother, or from a navel sore, it will appear within a very few days after birth. Cases arising from wounds and other causes may be met with at a much later period.

Infantile erysipelas is always dangerous, and when it is the result of infection from the mother it will usually result fatally. When arising from sores, recovery may take place, though this is perhaps the exception, and not the rule governing such cases.

When erysipelas is the result of infection, the symptoms are usually violent from the start. A patch of bright redness, attended with swelling, and having distinct and well-defined margins, appears upon some part of the body. Even if the inflamed spot is small, the child will have high fever and will suffer from pain, manifested by crying, and present all the appearances of being very sick. The inflammation will spread rapidly, still showing the well-defined borders that accompany an erysipelatous rash, while the fever still continues unabated, and the child grows rapidly weaker and

more debilitated. In a little while the eruption spreads from the body to the limbs, covering the whole surface of the child in many cases. The abdomen is swollen, caused by the bowels being distended with gas. Vomiting and diarrhœa set in, and death may be preceded by convulsions.

When erysipelas arises from a sore, or injury, the symptoms may not be so violent. The rash may start at the navel when sore, or at some other unhealthy part of the body, and spread with considerable rapidity. As the eruption extends to other parts it loses some of its redness at the original site, although the skin does not usually return to its healthy color at any affected place while the disease continues to spread. The child may continue to take its food and have a fair digestion, even though the eruption is extensive; and in a week or two convalescence may be established.

In severe cases the child refuses the breast, and will take no nourishment. The fever remains high; vomiting and diarrhœa supervene, and death soon takes place.

Many complications may arise during the progress of a case of erysipelas. Inflammation of the bowels and pneumonia sometimes occur. Abscesses in different parts of the body and sloughing of the skin may happen.

Erysipelas might be confounded with scarlet rash, but being a much severer disease than the latter, its symptoms are altogether more aggravated. The fever of scarlet rash is slight, and subsides in a day or two, while in erysipelas it lasts during the continuance of the eruption. In scarlet rash the redness is diffused, having no defined margin, but shades off so gradually that it is difficult to tell exactly where the rash ends and the healthy skin begins. In erysipelas the margin of redness is well defined and the line between the rash and the unaffected skin is well marked and can easily be seen.

I have seen cases of erysipelas, where the disease commenced at the navel and extended over the whole body, recover in two or three weeks, the skin peeling off, to some extent, as in scarlet fever.

The medical treatment of infantile erysipelas should be conducted by a physician; but an intelligent nurse can do a great deal of good by aiding the medical attendant in his efforts to restore the patient.

If the mother is suffering from "lying-in fever," the child must not on any account be permitted to take her milk. It must be fed with diluted cow's milk, or, if that disagrees with it, with condensed milk prepared as heretofore directed, or with some other form of infant food suitable to one of its age. Only such nourishment as is found to agree with its stomach and bowels should be given.

Various kinds of local treatment have been advised in this disease. Even the plan of drawing a line around the rash with a stick of caustic has been tried on the tender skin of a young infant. Such an application is both barbarous and dangerous. It is not the eruption on the outer surface of the skin that destroys life, but the complications that occur during the course of the disease, or the wearing out of the vital powers from the fever, or the action of the poisonous material upon the blood.

Whatever application is used upon the inflamed skin, it should be of a mild and bland character, the object being mainly to exclude the air from the diseased surface, thereby relieving the burning and pain that attends the eruption.

The oxide of zinc, finely powdered, and mixed with enough glycerine to form a thick paint, will be found useful.

The white lead paint may be used with benefit in cases where the eruption is not extensive. It relieves the pain and burning sensation quickly, and under its influence the child becomes quiet, while the general symptoms assume a more favorable character.

CHAPTER V.

Teething, or Dentition.

THE process of dentition is attended with danger to the child, and hence it is a period of great anxiety to the mother. Many infants that have before been healthy and robust become feeble and lose their flesh when they begin cutting their teeth. While dentition cannot be considered a disease of itself, yet, at this period of life, children are peculiarly liable to become sick from causes that at other times would not greatly affect their general health. This is due to the active changes that are taking place in the different organs of the body.

At this stage of infantile life there is considerable development of the glands of the stomach and intestines that are concerned in the process of digestion and absorption. The nervous system is in a condition of rapid growth and high functional activity. The irritation produced by a tooth that is about to appear through a gum is often sufficient to induce, not only an inflamed condition of the mucous membrane of the mouth, but also a fever that affects the whole system. This reacts upon the nervous system, through the influence of which great disturbances are witnessed in the various muscles of the body, such as twitching of the mouth, the hands, the feet, and, in some cases, general convulsions.

When suffering from fever, a child's digestion is weakened, and food that had before agreed perfectly well with it

cannot be borne—at least not in the usual quantity. Hence arise derangements of the digestive organs, as manifested by frequent vomiting and purging. In such cases the diarrhœa and vomiting are the result of the fever from which the child suffers, while the fever itself may be caused by the teething. It will thus be seen that diarrhœa during dentition is not *directly*, but *indirectly*, caused by teething. Owing to the heat of the body, the diet, instead of supplying the child with the required nourishment, ferments, turns acid, and produces diarrhœa, which, unless properly treated, may end fatally—the child dying from lack of nutrition, due to forcing upon its stomach food that it cannot digest and assimilate.

Because of the early age of the child and the conditions above mentioned, the first dentition is more liable than the second to be accompanied by serious disturbance of the general health; but even when cutting the second crop of teeth, digestive troubles may occur. Some children suffer much more than others during the period of dentition—many being quite sick each time that a tooth is about to make its appearance, while a few cut their teeth without being in the least affected by the process. It is difficult to assign a reason for this difference; but it would seem to depend more upon individual peculiarities than upon actual bodily health. Teeth may be cut early, and yet the process may be attended with considerable suffering, while delayed dentition may be unaccompanied by much trouble. A child that is usually healthy may become very sick during the time it is cutting its teeth, while another with inherited disease may suffer but little, if any, inconvenience.

Ordinarily children begin to "cut their teeth" at or about the seventh month; but this rule is subject to many exceptions. Thus, while in very rare cases a child may be born with one or two visible teeth, in others the process of

dentition may be delayed considerably beyond the seventh month.

The four front teeth—two in the middle of each jaw—usually appear about the seventh month. Ordinarily the two lower teeth are cut first. Between the seventh and tenth months the teeth on each side of the above appear—the two in the lower jaw usually first.

Soon after the twelfth month the first grinding teeth come through—two in each jaw—a space being left between them and the teeth that have already come through.

Between the fourteenth and twentieth months the spaces above mentioned are filled by the canine teeth—two in each jaw. The lower of these are called "stomach" teeth and the upper are called "eye" teeth.

Between the eighteenth and thirtieth months four more grinding teeth—two in each jaw—appear. These complete the first set, or "milk" teeth, as they are called.

Symptoms.—In favorable cases the general health is but little disturbed. There is an excessive secretion of saliva, and the child may have two or three operations of the bowels in the twenty-four hours. Possibly it may be a little restless and feverish, and inclined to bite the nurse's finger, or other substance, that is placed in its mouth. After a few days the point of a tooth makes its appearance through the gum, to be followed in a short time by the remainder of the crown. The slight derangement of health that may have occurred soon disappears, to return only when another tooth begins to come through the gum.

There is often, however, a great departure from the above conditions. Instead of two or three operations a day there may be a profuse diarrhœa, often accompanied with obstinate vomiting. The fever, instead of being slight, may be of a very grave character, and is usually higher in the morning than at night; in this respect differing from fever due to

other causes. The skin is hot and dry, and the sleep, instead of being quiet and restful, is greatly disturbed, the child twitching and starting and sometimes awaking in great terror. Convulsions may occur, so great is the disturbance of the nervous system.

During the day the child is restless and irritable. A copious secretion of saliva takes place, which flows from its lips over its chin. It occasionally gives a quick cry and contracts its features as if in pain. It makes "munching" movements with its jaws, sucks its lips, and gives every indication of uneasiness in its gums.

These symptoms do not, in all cases, indicate that a tooth is ready to come through the gum. Indeed, such attacks often occur days, or even weeks, before the tooth becomes visible, unless measures are taken to hasten its appearance.

It is a popular belief, confirmed by experience, that the cutting of the "eye" and "stomach" teeth is especially apt to be attended with vomiting, diarrhœa, and fever.

Complications, consisting of disorders of the mouth, stomach, respiratory organs, and the nervous system, may imperil the life of a child that is teething. Of these, *vomiting* and *diarrhœa* are the most common. As before stated, the increased heat of the body produced by the fever that is usually present during dentition, is often sufficient to cause fermentation of the food in the stomach and bowels. This gives rise to vomiting and to purging, the discharges from the bowels being of a yellow or green color and mixed with lumps of curd or undigested milk.

Redness and inflammation of the gums and cheeks are often present when the teeth are about to make their appearance. Sometimes an eruption, consisting of vesicles the size of a pin's head, and of a gray or yellowish color, are discovered on the inside of the lower lip, the gums and the cheeks. This eruption is known as *aphtæ*, and usually

disappears in a few days under judicious treatment. Sometimes, however, the eruption is extensive, and is spread over a portion of the tongue, which, becoming sore, causes the child to suck with great difficulty, and sometimes to refuse the breast altogether. In extreme cases the child's condition may become serious. The saliva runs from its mouth, the breath is offensive, and, being able to take but little nourishment, it rapidly loses flesh and becomes greatly emaciated.

Ear-ache is a most painful affection to which children are subject during teething. It is most likely caused in many cases by the inflammation extending from the mouth to the middle ear along the eustachian tube. Some authors, however, believe that the irritation from an inflamed gum, being conveyed to the nervous centres and thence deflected to the blood vessels supplying the ear-drum, causes inflammation of that structure, thus producing ear-ache.

Catarrh of the air passages may occur during the cold, damp weather of winter or early spring. This is owing to the fact that the fever and the irritable condition of the nervous system, so often attending dentition, by their debilitating effects upon the child, render it peculiarly susceptible to the injurious effects of cold and disagreeable weather. The disease is always attended with considerable fever, hurried breathing, and more or less cough, which may have a croupy sound. By proper treatment the disease can usually be controlled in a short time; but if neglected, and if the child is further exposed to the influence of cold, or to draughts of air, bronchitis or broncho-pneumonia may result.

Eruptions of various kinds are prone to occur upon the skin of a child when it is cutting its teeth. Many of these eruptions are of a simple character and soon disappear; while others, such as *eczema*, may prove exceedingly troublesome and difficult to cure. Indeed, the latter disease, when it appears upon a child's skin while it is teething, often

spreads with great rapidity, and may in a short time cover a great part of the body.

Owing to the rapid development of the nervous system in children at the time of dentition, *nervous disorders* are both frequent and dangerous. The morbid and excitable condition of the nervous centres at this time is such that an irritation which at a later period of life would not be serious is often sufficient to produce great disturbance of the sleep, with startings and twitching of the muscles, and in some cases even convulsive attacks. That the irritation caused by a tooth pressing upon a tender, swollen and inflamed gum may be sufficient to cause convulsions cannot, I think, be doubted.

Treatment.—Children that are teething should be comfortably dressed, and wear flannel next to the body. In cold weather the abdomen must be kept well protected, and the child should not be exposed to the cold out-door air.

The diet must be carefully guarded, and all articles that are likely to undergo fermentation in the stomach and bowels must be withheld. Food that is irritating or indigestible must not be allowed, and the greatest judgment should be exercised in selecting such nourishment as will agree with the child and be easy of digestion.

The skins and seeds of fruits are wholly indigestible, and rarely fail to produce serious irritation of the bowels. Sour and unripe fruits of all kinds must be rigidly excluded from the child's diet, and to this end parents cannot be too watchful.

Vomiting can usually be controlled by the application of a weak mustard plaster over the stomach, and the withholding for several hours of all food and drink from the child, except an occasional spoonful of cold water to allay its thirst.

During the time when a child is teething, its bowels should be kept open so as to have one or two operations a day. But should the operations be oftener than this, and especially if

they are watery and offensive, such measures must be taken as will tend to restrain them. If the looseness of the bowels is allowed to continue without treatment there is danger that the attack will in the end terminate in cholera infantum, or ileo-colitis.

A child that has been suffering from diarrhœa is often unable to stand the extreme heat of the summer months, and is liable to be seized with cholera infantum, a disease that under these circumstances may cause death in a short time. Therefore, diarrhœa in a young child should always receive careful attention, and it must not be forgotten that it is a disease much easier arrested at the beginning than after it has continued a long time.

Many mothers believe that diarrhœa is a natural attendant upon teething, and make no attempt to correct the disease. This is a serious mistake, and while care should be taken that the child's bowels do not become constipated, it is equally necessary to overcome any tendency to continued diarrhœa, as it prostrates the little patient at a time when it should be increasing in strength.

In the treatment of the eruptions that appear upon the cheeks, the tongue and the inside of the lips, absolute cleanliness must be observed. With a soft muslin rag that has been dipped into warm rain water, the parts must be gently but thoroughly washed several times a day. No rubbing of the surface should be permitted; but with a wet rag, or mop, any foreign matter should be removed, and afterwards the sores can be wet with a mixture of alcohol, tannin and water applied by means of a camel's-hair brush. An even teaspoonful of tannin, added to a teaspoonful of alcohol, and two tablespoonfuls of water, will make a mixture sufficiently strong for this purpose. If the child be nursing its mother her nipples must be treated in like manner; otherwise they may become affected with the disease.

The treatment of *earache* is given at some length in Chapter XXIII of this book.

A child afflicted with *catarrh of the air passages* while teething must be carefully guarded from exposure to cold and from draughts of cold air. The room in which it is confined should be of moderate temperature and properly ventilated.

The child's clothing should be sufficiently warm, and that worn next to the body should be made of flannel. If there is much fever, with a hot, dry skin, the mother can occasionally administer a few drops of sweet spirits of nitre in a little water. Stimulating liniments or a weak mustard plaster applied to the upper front part of the chest will be beneficial.

Catarrh of the air passages occurring during dentition is a disease that may become dangerous unless properly treated, and the mother should always seek the advice of a medical practitioner when possible.

Eruptions of a simple character that appear upon the skin of a child during the process of teething can usually be controlled by bathing the parts with a weak solution of sugar of lead, and afterwards applying the oxide of zinc ointment. If the eruption assumes the form of *eczema,* or of *scald head,* it will most likely last a long time, and be very difficult to cure. For information in regard to the treatment of these diseases, the reader is referred to the articles on eczema and ringworm to be found in Chapter XVIII.

The *nervous disorders* of children during dentition should always receive careful attention. If a child that is teething is observed to have starts and twitches while asleep; if its eyes are only partially closed, leaving the white part exposed; if it wakes easily, starting up in a condition of alarm at the slightest touch, the mother should understand that her child may be in danger of having convulsions, and should consult a physician without delay. In the meantime

she can place it in a warm bath—if it be not afraid of the water—which may, in mild cases, soothe the nervous system, so that its sleep will be quiet and refreshing.

When a tooth is ready to make its appearance the gum over it will be found swollen and red, and the child will often give signs of being in pain, even when it seems to be otherwise in ordinary health. The pressure upon the congested gum produces pain that is not relieved until the tooth becomes visible. If a hard substance be given the child it will close its gums upon it, although the act may increase its pain. Under these circumstances it should be given an ivory ring, or, what is better, a thick piece of bread-crust that has been baked until it is very hard, the biting of which will assist the tooth in making its way through the gum, after which the trouble is at an end. But if these means do not succeed, and if the gum becomes swollen and of a purplish color, and especially if diarrhœa and vomiting supervene, it will be necessary to divide the gum with a knife or lancet.

This operation, though trivial in character, requires some skill in its performance, and should be done only by a physician. If it be necessary to cut the gum over one of the front teeth it will be sufficient to make one incision in a line with the jaw. The point of the knife must be carried down to the tooth, and the incision made sufficiently long to enable it to project through without difficulty. When this has been done, it is best to insert the point of a dull knife-blade into the incision on each side, and press the gum from the tooth. If it becomes necessary to cut the gum over a grinder tooth, it must be done by making two incisions over the crown—one on a line with the jaw and the other at right angles to the first.

The two incisions should cross each other over the centre of the crown. Then with the point of a dull knife-blade

press the divided gum from off the top of the tooth and away from its sides.

If these instructions are carefully followed, and the gum is not cut at too early a stage, the tooth in each instance will make its appearance in two or three days after the operation. In performing this little operation it is best to use a knife that is not too sharp. A somewhat dull knife will do the work as well, and is not so dangerous in case it slips off of the tooth.

It may be urged by the mother that a dull knife should not be used because it would give the child more pain than would a sharper instrument. The fact is, however, that the cutting of a swollen, discolored gum seems to give a child but little, if any, pain. I have often cut the gums of children without the little ones giving the least sign of suffering from the operation.

As before stated, the gums should be cut only by a physician, as, in rare cases, some trouble may arise from bleeding. This, however, will never result from a proper division of the gums in a healthy child; but if it be suffering from that disease of the blood known as *purpura hemorrhagica*, the operation may be a very dangerous one. Hence, if large purple spots be found under the skin on the body and limbs of a child, caused by extravasation of blood at these points, the physician should not on any account cut the gums, as fatal bleeding might follow. Indeed, the mere scratch of a pin might, in such a case, cause death from loss of blood. Medical writers have reported cases where death followed scarification of the gums, it being impossible to arrest the flow of blood.

CHAPTER VI.

Nursing and Feeding.

THE mother must not only be careful in regard to the nursing and feeding of her child, and to the preparation and the quantity of its food, but she must also remember that any deviation from good health on her part will affect her offspring through the medium of her milk. She should obtain a sufficient amount of sleep, and as much as possible avoid becoming over-heated before giving her child the breast. She should also cultivate an even temper, for if she allows herself to be overcome by fits of anger before nursing her child, the milk will be almost certain to disagree with it.

If the mother's health is bad and the child shows symptoms of becoming sick from nursing, no time should be lost in taking it from the breast and giving it to a healthy wet-nurse, if one can be found, or else placing it upon such artificial food as may agree with it. If the mother's bad health is only temporary, the child can again be put to the breast when she has recovered, but if her ill health continues, the weaning must be permanent.

The mother must avoid unwholesome articles of diet, such as salads, pickles, cucumbers, acids, etc. Spirituous and malt liquors should not be taken unless they are prescribed by a physician.

When a nursing child has diarrhœa, the mother should avoid all purgative medicines, for, through the medium of

the milk, they will affect the child's bowels and add to the existing trouble.

On the contrary, if the child is suffering from constipation, and the mother's bowels are costive, a laxative taken by her will have a beneficial effect upon the infant.

If the mother has a return of her monthly periods soon after confinement, she will probably find that a little while before the return of her sickness and during its continuance, the child was fretful and its discharges frequent and watery in character. In such cases she should let the child nurse but little at a time, and not too often; and in lieu of the part withheld she must give it artificial food until she is well, when she can let it take its usual amount of breast milk. In the course of two or three months the milk will cease to disagree with the child and it can then take the breast without interruption.

If, while nursing, the mother becomes pregnant, and there are evidences of her milk disagreeing with the infant, it should be weaned at once.

Some women, to avoid becoming pregnant, continue nursing their children long after the proper time for weaning has passed. This is a bad practice and should not be pursued, as the health of both mother and child may become impaired thereby.

Irregular nursing should also be avoided. Not only must the child's stomach have sufficient time to digest the milk it contains, but it should also have a period of repose before its powers are again taxed.

A child that is feverish from any cause will desire to take its mother's breast very often; if this is permitted, it will be but a short time until a trifling ailment may become a serious disease.

Instead of allowing the child to take the breast as often as it desires, the mother should restrict its nursing to proper

periods, and assist in allaying the thirst by frequently giving it small quantities of cold water—from a teaspoonful to a tablespoonful at a time.

As before stated, it may be two or three days after the child's birth before the mother's breast contains any milk. But this should not prevent the nurse from placing the child to the breast several times a day, as by so doing the secretion of milk will be hastened. But if the child obtains no nourishment from this source, it will be necessary to feed it artificial food until the mother gives sufficient milk for its wants.

It has been estimated that from a quart to three pints of mother's milk a day is sufficient for a young infant. If this be taken at intervals of two or three hours during the day, and half as often during the night, the amount taken at one time is not great. Most children suckle too much at a time, and, as a result, suffer from indigestion.

The quantity and quality of milk given by mothers differ in many instances. Some give a sufficient amount that is rich and possesses all the ingredients necessary for the growth of the child, while others secrete but a small quantity, which may or may not be up to the proper standard of richness. Others secrete a large amount, far in excess of the child's wants, but of a poor quality, the watery element being in excess. Those infants who draw their nourishment from healthy mothers, whose milk is rich in all the elements needed to nourish the child, will be in a condition most favorable for rapid growth and good health.

The old maxim that the "mother's milk is the natural (best) food for the child" applies to such cases. But children who draw their sustenance from mothers whose milk is deficient in quantity, or poor in quality, may require additional food for their subsistence. Whether it will be best to wean them entirely, or let them get part of their food from

the breast and the balance by artificial feeding, will depend altogether on circumstances.

If the mother's milk be secreted in large quantities, and yet so poor in quality that the infant does not thrive on it, it is best to withdraw the child entirely from the breast and trust wholly to artificial feeding. But if the quality of the milk be good, yet the quantity be insufficient for its sustenance, the child should continue to nurse, and the deficiency must be made up by artificial food.

Something can be done by means of treatment to moderate the quantity, and improve the quality, of milk secreted by mothers who are not able to properly nourish their children, notwithstanding the flow is in excess of the usual amount. In the first place they should avoid as much as possible, all those fluids that have a tendency to increase the quantity of milk—for instance, beer, ale, porter, wine and various kinds of soups. Good, wholesome animal food, eggs, butter and like articles, tend to improve the quality of the milk.

Where the amount of milk secreted is too small, but of rich quality, the administration of fermented drinks will often be advantageous. Ale, beer or porter can be used, to be taken with the meal. The various preparations of malt are also useful in such cases.

The mother can also drink plentifully of cold water; that obtained from wells being preferable to cistern water, owing to the salts contained in it, which are needed to produce healthy milk. Attention should be paid to the state of the bowels, and if they are inclined to constipation, an occasional dose of mild aperient medicine will be beneficial.

While it may be necessary to put the child to the breast as often as every two or three hours throughout the daytime, it will be sufficient to let it have its meal only every three or four hours during night. The practice of letting the

infant nurse each time it cries should be avoided; otherwise the mother will be deprived of needed rest and sleep; for the child will become more and more exacting as it grows older, and its constant nursing will keep up a drain upon her nervous system and cause her rest to be frequently broken. A child that is allowed to take the breast at will is a constant annoyance and trouble during the necessary temporary absence of its mother; besides, its stomach will have but little time for rest. The nourishment taken at one nursing should undergo a process of digestion and pass into the intestine, so that the stomach, being empty for a while, may cause a desire for more food before it is again put to the breast. This requires about two hours, and if that time be prolonged somewhat, it will be better for the infant. If the child nurses too often, it will tax the stomach beyond its power of digestion, and colic will be almost sure to result.

As the child grows older, the interval between meals may be lengthened, so that at six months of age it should take the breast once in every three or four hours during the daytime. The hours for nursing here given are adapted to most cases; but there are many exceptions, and as no general rule can be applied to every case, much will have to be left to the mother's good sense in this matter.

Young children often throw up a portion of the milk that they have swallowed. When this occurs soon after nursing, it is merely an indication that too much has been taken, and that the stomach is unable to contain the whole amount. When this condition is present the child should be removed from the breast before it has taken its accustomed amount of milk. If the practice of over-feeding be long continued, it will give rise to serious derangements of the stomach and bowels.

While nursing her offspring a mother should not give way to her passions, but cultivate an even temper and gentle dis-

position. It is well-known that a nursing child is easily affected by the mental condition of its mother. A sudden burst of passion, fright, or violent agitation will often produce in the suckling babe diarrhœa, vomiting, convulsions, and even death.

When from any cause it becomes necessary to take an infant from the breast and give it artificial nourishment, care must be exercised not only in selecting the proper kind of food, but also in the method of giving it. The child should nurse from a bottle, as this most nearly resembles the natural method of taking its food. If fed from a spoon for a long time, it may refuse to take the mother's nipple afterwards; and in those cases where the child has been only temporarily weaned it may be almost impossible to induce it to return to the breast. When it refuses to take its nourishment in an artificial manner, the difficulty can sometimes be overcome by placing the bottle against the mother's breast so that the mouth-piece will be quite near her nipple.

If, in spite of all these efforts, the infant still refuses to draw its milk from a nursing bottle, it will have to be fed from a spoon until, by continued efforts and the exercise of some ingenuity, the nurse succeeds in getting it to take its nourishment in the desired manner. In selecting a nursing bottle, those with long tubes should be discarded, for the reason that they are hard to keep perfectly clean. Bottles with a short neck, upon which is fitted a rubber nipple-piece, sufficiently perforated to permit the milk to flow freely, are the best.

It should not be forgotten that nursing bottles require great care to keep them clean and pure, and if they are neglected, and any portion of decomposed milk is permitted to remain in them, it will usually produce sickness in the child. The bottle must not only be thoroughly washed in a strong solution of baking soda and warm water, but must also after-

wards be well rinsed in pure water. This operation must be repeated each time after the child nurses. Such care involves labor, but there is no safety without it.

The position of a child in nursing its mother is semi-erect; that is, its head and shoulders are slightly raised, so that its mouth may reach the nipple. When feeding a baby from the bottle the nurse usually lays it on its back, with its head sometimes lower than the stomach. This is wrong, as in this position the milk is liable to be thrown up and lost. It is best to place the infant on its side—the right being the preferable one—with its head and shoulders slightly raised, so that it can take and retain its food without difficulty.

The proper preparation of artificial food for infants requires a great deal of care and skill. Milk forms the principal part of most infant foods, and none but a pure, fresh article, from a healthy cow, should be used. Such milk can usually be obtained by taking the time and trouble to secure it. For feeding very young children, the milk from a cow whose calf is but a few weeks old is best; but as the child advances in age this is not so important. The milk must be lately drawn from the animal, and to secure it fresh enough, the cow ought to be milked three times a day. The first milking should be at an early hour in the morning, for the child's forenoon food; the next at or about noon, to serve for the afternoon feeding; while the milk used through the night ought to be taken from the cow after dark.

After the milk has been brought to the house, it should be kept in a cool, well-ventilated place. It must not be put into a damp cellar, or into a room where cabbage or other vegetables are kept, as it would absorb the odors from the vegetables, especially if they are undergoing decay.

It is best to prepare the food ready for use as soon as the milk is brought to the house, for, after having been properly prepared, it will keep better than the milk before it has been

heated. But if the milk be drawn from the cow three times a day, neither it nor the food will have to stand long before being used. Only enough food for the child to take at one meal should be put into the bottle at a time. After it has taken a sufficient quantity the bottle must be emptied and washed, to be again filled with fresh food when needed for the next meal.

The most common substitute for mother's milk is fresh cow's milk diluted with water. Three parts of boiling water added to one part of cold milk will sufficiently scald the latter without boiling it. If a little hulled barley be boiled with the water before adding it to the milk, it will be better than the water alone. This proportion is intended for infants under three months of age. After the third month, and up to six months, the proportion should be two parts of water to one of milk. From six months to one year equal parts of each can be used. After the child is a year old it will be sufficient to take one part of water to two parts of milk. In every case the water should be boiling hot when added to the milk, and contain a small amount of white sugar. The sugar should be used in minute quantities, however, or it may produce acidity of the stomach. About a gill of this mixture can be fed to an infant every two or three hours during the day.

If the milk, prepared as above directed, does not agree with the child, the nurse may try the cream mixture made as follows: Take one part of fresh country cream and add to it ten parts of hot water, into which one even teaspoonful of white sugar for each gill of water has been dissolved. This should be stirred until well mixed, and fed to the infant while warm, to the amount of a gill every two or three hours during the day.

If diarrhœa follows the use of the milk or cream mixtures, it will be necessary to increase the relative amount of water

until the mixture ceases to disturb the bowels. If the child continues to receive some nourishment from the mother's breast, the amount fed to it by artificial means must be decreased.

A good substitute for the mother's milk during the first three or four months of infantile life is the common condensed milk. It is prepared for use by adding one part of it to about twenty-two parts of water for an infant under three months; for a child over three and under nine months, about one part of condensed milk to eighteen parts of water; while for children over nine months of age the proportion should be one part of the milk to twelve parts of water. It can be given in the same quantities as the ordinary milk and water mixture. If after a fair trial the condensed milk is found to disagree with the child, some other article must be substituted for it.

Reed & Carnrick, of New York, prepare a food for infants called *Lacto-Preparata* (prepared milk), which is well adapted to the nourishment of children under six months of age. Those children with whom the condensed milk disagrees will often thrive on Lacto-Preparata. It is also of excellent service in many cases of digestive disorders where the ordinary food does not agree with the child.

The various preparations of baked flour sold under the name of infant foods will often agree perfectly well with a child, and afford it all the nourishment needed for its growth. These foods, however, are not well adapted to an infant under four months of age; milk in some form being the only article suitable to give one so young. After the fourth month infant foods may be used in those cases where milk is not well borne.

The packages in which "infant foods" are contained have printed on them full directions for preparing the food for use. But if diarrhœa is produced by the food prepared ac-

cording to the directions given on the packages, it will be best to diminish the amount of milk entering into the preparation, using an equal amount of water in its place. Thus, instead of using one-third milk to two-thirds water, it might be well to use only one-fourth of the former to three-fourths of the latter. In some cases it is necessary to reduce the relative amount of milk still further. As the child gets accustomed to the food, the milk can be gradually increased until the usual quantity is restored to the mixture.

If the child's bowels become constipated while being thus fed, the quantity of milk can be gradually increased until they resume their healthy action.

Usually about two ounces can be fed at a time, but in some cases a smaller quantity should be given. Like other artificial foods it should be given in a warm state.

The food must be prepared often, and with fresh milk. After its preparation it must be kept on hand only a few hours, and that which is to be used during the night must not be made until bed-time. The greatest care must be taken to keep the bottles, the tubes, and the vessels holding the food, sweet and clean according to the directions heretofore given.

Persons living in the country, far away from drug-stores where infant foods are sold, can prepare a good substitute by using fresh cream crackers. Put them into a hot oven, brown them carefully without burning, then grate them into fine flour. Put a dessertspoon heaping full of this into eight tablespoonfuls of water and bring it to a boil, stirring the mixture the meanwhile. As soon as it begins to boil take it from the fire and add four tablespoonfuls of fresh milk and a little sugar. This can be fed in the same quantities as the milk and water mixture. If this food causes diarrhœa, less milk should be used in its preparation and more water added ; but if the bowels become

constipated from its use, the quantity of milk should be gradually increased until they are properly regulated.

Sometimes the child, while taking artificial nourishment is attacked with vomiting and purging when the food does not really disagree with it, the trouble being caused by overfeeding. Instead of at once withdrawing such food, the mother should give much less of it at a time, and, if necessary, at shorter intervals. By pursuing this course, many cases that are at first troublesome will progress satisfactorily. In health, as well as in disease, the child's stomach is often overtaxed with food, causing vomiting and diarrhœa. By giving a smaller quantity at a time the difficulty is soon overcome and the child has no further trouble.

The practice of adding lime water, bicarbonate of soda and other alkalies to milk before it is fed to an infant should be avoided if possible. It is better to prepare the food in such manner as will prevent it from undergoing acid fermentation than to endeavor to arrest such fermentative action by adding an alkali in advance of the feeding. Cases are sometimes met with, however, where it seems necessary to add a small portion of lime water or soda to the milk before giving it to the child.

Sometimes thickening substances, when added to the milk food, act beneficially by preventing the formation of large lumps of caseine. Of these, pearl barley water and gelatine are perhaps the best. Barley water is made by boiling slowly two large teaspoonfuls of washed barley in a pint of water until it has been reduced to two-thirds of its bulk. After having been strained it can be added to the milk in place of water.

To prepare the *gelatine*, put a piece of it, an inch square, into a teacupful of cold water, and after letting it stand for three hours, place it into a sauce-pan with a sufficient amount of water, and boil until the gelatine is dissolved.

When cold this forms a jelly, of which one or two teaspoonfuls may be added to each bottle of milk food.

Another article that is sometimes used in feeding infants is called "flour ball." To make this, take a pound of good wheat flour, and, tying it up tightly in a pudding bag, place it in a sauce-pan of water and boil for ten hours. When cold, remove the bag and cut away the soft outer covering of dough that has been formed, and reduce the hard, baked interior by grating. In the powder thus obtained the starch has been converted into dextrine by the process of cooking. Reliance must not be placed on this article alone, but it may be used while a part of the child's nourishment is furnished by other foods. Only two meals of "flour ball" a day—one in the morning and the other in the afternoon—should be given. To prepare these meals rub one teaspoonful of the powder with a tablespoonful of milk into a smooth paste; then add a second tablespoonful of milk, constantly rubbing until a cream-like mixture is obtained. Pour this into eight ounces of hot milk, stirring it well, after which it is ready for use. If the child is under twelve months of age, the milk should be diluted by the addition of one-third its quantity of boiling water.

If the child's bowels are constipated, the "flour ball" should be made of coarse flour; but if there is a tendency to diarrhœa, a fine article of bolted flour must be used.

As before stated, the milk used in feeding infants should usually be scalded but not boiled. There are exceptions, however, to this rule. Persons living in large cities cannot be sure that the milk furnished them is obtained from a healthy cow. Indeed, it may be taken from a decidedly tuberculous animal, and to give such milk without first boiling it might produce tuberculosis in the infant. It is at least certain that a child cannot thrive on tuberculous milk, and hence it is best, in all cases where the milk is obtained

from a doubtful source, to boil it before mixing it with water or the various artificial foods.

In some of the children's hospitals the milk fed to infants is first sterilized by heat in order to destroy the diseased germs that may be present; but the process is somewhat complicated, and, therefore, it will not be described here. Milk that has been boiled for five minutes will be sufficiently sterilized, and if the directions for infant feeding given in this book are strictly followed, the mother will usually have but little difficulty in selecting a food that will agree with her child.

As the child grows older, it can be allowed other articles of diet besides the infant food. After the eighth month, farinaceous articles that are easily digested can be given. Some light vegetables may also be allowed; but in making trial of these the nurse must be on the watch, and if the stomach and bowels become deranged from their use, they must be discontinued at once and the child confined to its former diet.

All kinds of meats had better be kept from the child until it is a year old. After this period tender meats may be cautiously fed to it, carefully watching the effects of such food on the bowels, and if any disturbance of those organs should arise, the meat must be withdrawn from the diet.

The rules above given are general in character, and will apply to a majority of cases. Children vary greatly in their ability to digest certain foods; an article that disagrees with one may be well borne by another.

The intelligent mother will soon learn the particular kind of food that best agrees with her child, and if she proceeds cautiously in feeding untried articles, carefully watching their effects, and promptly withdrawing them when they disagree, she will usually be able to avoid making serious mistakes.

CHAPTER VII.

Weaning the Child.

AT the time of weaning, disorders of the stomach and bowels are quite frequent, being caused, in many cases, by improper food, or by over-feeding, or by weaning too suddenly or too early.

When it becomes necessary, from any cause, to wean a child soon after birth, some difficulty may be expected in selecting a food that will agree with it, and at the same time afford enough nourishment for its proper growth. It will often tax the knowledge and ingenuity of both the mother and the physician to find a food that will suit each case, for that which agrees with one may not be suitable for another. All artificial foods, unless properly prepared, usually disagree with a child, and before rejecting them as unsuitable it is well to change the method of preparing them. Too much importance cannot be attached to this subject, and that mother will succeed best in rearing her child, and in saving it from pain and disease, who has the most skill and patience in selecting and preparing its food, and uses the best judgment in its administration.

When very early weaning is necessary, the mother may expect her child to suffer somewhat from stomach and bowel complaints. The change from natural to artificial food in one so young is usually followed to some extent by troubles of the digestive organs. If a good, healthy wet-nurse can

be found, all may be well, but the difficulty of securing such a nurse, especially in rural districts, renders artificial feeding compulsory in most cases.

When possible, a child should be gradually weaned. While a sudden substitution of artificial food for the mother's milk will, in nearly all cases, produce disorders of the stomach and bowels, it often happens that a gradual weaning and blending of natural with artificial food is productive of no serious inconvenience.

No specific time can be given when children should be weaned. If the mother's health is good, and the child is thriving on the breast milk, showing no signs of sickness, it may be best to let it nurse until it has passed its second summer. In these cases, however, the child should partake of a mixed diet after about the seventh or eighth month.

When the mother's health is impaired, or when her milk does not agree with the infant, it may have to be weaned at a much earlier period. This can usually be done with safety if due care is observed in selecting a proper substitute for the mother's milk.

A child that has been healthy from birth, and has nursed its mother constantly, may, at about the seventh or eighth month, commence to eat a little bread, cracker, or other farinaceous article, if such food is found to agree with it.

Gradual weaning, which is really much safer than taking the child from the breast suddenly, can be accomplished in four or five weeks. Thus, during the first week the mother can give her child one meal of artificial food and six nursings daily; during the second, two feedings and five nursings; during the third, three feedings and four nursings; during the fourth, four feedings and three nursings; and during the fifth, five feedings and one nursing. After this the breast milk can be entirely withheld, and the number of articles given the child can be increased,

taking care to notice the effect of each kind of food upon its health; and if diarrhœa or colicky pains result, the article that produced them should be withdrawn.

It should be remembered that with children as with grown people, certain articles of diet that agree with some may not be borne by others. Therefore the mother should carefully watch the effect of the food given her child, rejecting that which disagrees and adhering to that which suits its digestion.

In selecting food for a child its tastes and desires should be consulted to some extent. Other things being equal, a dish that is desired, and for which the person has an appetite, is much easier of digestion than one the thought of which is revolting.

No one can specify with certainty the particular articles that will be best adapted to each individual. The most that can be done is to designate certain classes of food from which the mother can make a selection that will be best suited to each case. Among the articles that she can select from may be mentioned milk, bread, potatoes, fresh butter, rice, soft boiled eggs, broths, and after the twelfth month, meats of various kinds, either roasted or broiled.

It sometimes happens that fat bacon, when thoroughly boiled, will agree with a child, even though suffering from diarrhœa, especially if it be of long standing. It does not agree in all such cases, and when given under these circumstances the effect must be carefully watched, and if it causes trouble, it must be withdrawn without delay. It should never be given to a child with acute diarrhœa, but only when the disease has been of long standing and there is great emaciation and an absence of fever.

During warm weather fruits should be sparingly given—if at all—as they tend to produce diarrhœa in very young children; but during winter baked apples or stewed prunes

may be cautiously given. Raspberries, blackberries, and strawberries should not be allowed, even if cooked, as the seeds will likely cause diarrhœa; but these fruits may be cooked and the seedless pulp and the juice fed to healthy children in small quantities. During the warm months bananas, and even oranges, had better be kept from the child, as they sometimes produce disturbance of the stomach and bowels.

Only liquid food should be given late in the day, or at night, as solid articles eaten shortly before bedtime will greatly disturb the child's rest.

After a child has begun to eat, it must not be confined to one or two articles, but its breakfast, dinner, and supper should consist of different kinds of food. Children should be fed at regular intervals, and the practice so commonly in vogue of allowing a child to eat whenever it pleases, should be avoided.

All articles of diet ought to be prepared with great care and in such manner as will render them palatable and easy of digestion.

Children should be taught early that they must not have the kind of food eaten by older persons. The practice of permitting little children to come to the table and eat anything that they may cry for is objectionable. They are almost certain to crave some article that is unsuited to their digestion, and the mother, in order to get rid of their importunities, is apt to yield to their demands. By proper training at an early day they can be taught to be content with such articles as their parents may think best to give them.

For drink, the child can be given cow's milk if it agrees with it; but if it disturbs the stomach or bowels, a mixture, consisting of one part of fresh milk and two parts of boiling water, to which a little sugar has been added, may be tried as a substitute. This will usually agree quite well, even in warm weather.

The mother, having gradually accustomed her child to the use of different articles of food, will have no difficulty in removing it from the breast and placing it entirely on a miscellaneous diet.

When a child is troublesome to wean, being indisposed to give up the breast, the mother may wet her nipples with a decoction of aloes, or some other bitter substance, before letting it nurse. It will soon become disgusted with the taste, and will refuse to nurse any longer.

Causes that may lead to Early Weaning.—In some cases, long before the usual time of weaning arrives, the mother may find it necessary, owing to some disease affecting herself or the infant, to remove the latter from the breast.

First. The mother's breast may become inflamed, leading to an abscess, and sometimes to the drying up of the milk. If only one breast be inflamed, the child can nurse the healthy one, and any deficiency in the amount of milk can be supplied by artificial food; but sometimes, though rarely, both breasts become inflamed, in which case the child must be weaned, at least temporarily. Of course, the milk from an inflamed breast is not healthy, and the child should not be permitted to take it. Oftentimes the milk does not dry up in a gathered breast, or, if it does, it may return; and in either event the child may again nurse when the breast has healed.

Second. In cases of nursing sore mouth, it may be necessary to wean the child in order to protect the mother's health, and possibly to save her life. Severe cases of this disease are impossible of cure as long as the child nurses; but after the milk has dried up, and the system is no longer taxed with its secretion, the disease usually yields readily to suitable treatment.

Third. When the mother's health is bad from any cause, and when continued nursing may endanger her life by its

weakening effect upon her system, the child must be removed from the breast at once.

Fourth. The child must be weaned without delay when it is found that the breast milk persistently disagrees with it. Sometimes the appearance of the menses will render the mother's milk unwholesome. Pregnancy produces such a change in the milk as to render it unsuitable for the child, and under such circumstances it should be taken from the breast.

Fifth. When the child is seized with cholera infantum or summer complaint, and when vomiting and diarrhœa are persistent, it is often advisable to wean it at once. This weaning may be only temporary, for after the child recovers to a great extent from the disease, it may again be put to the breast, the mother in the meantime having her breast drawn to prevent her milk from drying up.

It is usually taught that the best nourishment for a child with summer complaint is its mother's milk. This, however, is in many cases erroneous.

When the child is very sick, the mother becomes alarmed; she loses sleep, and her nervous system is greatly deranged, seriously affecting the quality of her milk, and rendering it poisonous to the infant, thus causing a continuance of the vomiting and diarrhœa. If a healthy wet-nurse can be found, who has but little interest in the life of the infant, and whose milk therefore is not affected by its sickness, it will be best to place the child to her breast; but in the absence of such a nurse, recourse must be had to properly prepared artificial food. Of course artificial feeding, to be successful under such circumstances, must be conducted with the greatest possible care.

CHAPTER VIII.

Hygiene of Children.

KINDNESS TO CHILDREN.

THE best method of rearing children is a problem that has vexed the minds of many parents from the earliest ages to the present time. Whether it is best to follow the advice of the wise Solomon and use the rod frequently, or to trust to persuasion and kindness, is a question that would be answered differently by different persons.

The probabilities are that all children cannot be best controlled by the same methods; but it seems very doubtful to the writer that any child was ever improved in conduct and morals by means of physical punishment. It is true that the fear of such punishment may in some cases deter a child from an open violation of its parent's orders; but while the *act* may be restrained, the *desire* is not overcome.

Children are sensitive to a high degree, and matters that seem trifling to grown persons are often of enough importance to cause the little ones hours of unhappiness and misery. A scolding, an unkind word, or even an ordinary remark given in a harsh tone of voice, may be sufficient to wound the feelings of a young child and make it shed tears of sorrow.

A child that persists in being bad when surrounded at all times by kind and loving influences must indeed be of

vicious stock, and whether under such circumstances physical punishment would, in the least degree, tend to purge the blood of hereditary influences, is, to say the least, doubtful.

As parents grow older they become wiser, and the writer has known many who in their old age deeply regretted that in their earlier days they had been in the habit of inflicting physical punishment upon their children for disobedience.

Harsh treatment not only ruins the disposition of a child, making it disagreeable and morose, but in some cases health, and even life itself, is sacrificed by well-meant but injudicious and improper punishment. An instance came under the writer's observation many years ago, when a bright nervous boy of tender years and delicate frame, for a misdeed that would have been excused by a wise and loving parent, was subjected at school to such punishment and mortification as produced inflammation of the brain and death. Instances have been recorded where children, to avoid punishment, or while laboring under the mortification of having been improperly punished, have taken their own lives.

Good advice and kind remonstrance on the part of a parent has a more restraining influence than ever existed in whips or switches. Good advice, however, is to a great extent impotent unless backed by good example on the part of the parents. A boy usually considers himself privileged to follow the example set by his father. How inconsistent, then, to expect the son to be truthful, honest and upright in his conduct when the father is guilty of falsehood, dishonesty and immoralities! Or how can a mother, who on the least provocation indulges in fault-finding, scolding and abusive language to a daughter, expect that daughter to become affectionate, good-natured and amiable?

Kindness to children, with proper regard for their happiness and pleasure, as well as sympathy for them in their troubles, is not only necessary for the highest development

of their mental and moral nature, but it also has an important bearing on their physical welfare.

A mother who is devoted to her children, and watches over them with an eye the light of which is kindled by the flame of maternal love, will always be on guard to protect her offspring from disease and injuries. Their least ailments are noticed, and loving hands administer to their relief.

To rear her child in such manner as will best secure its physical, mental and moral welfare, is her chief ambition. To this end she bends her best energies, and day and night her watchful care is over her loved one, being buoyed up by the hope that in adult life her child will be perfect in its physical development and sound in its mental and moral faculties. In short, she hopes that the old adage, "*Mens sana in corpore sano*" (a sound mind in a sound body), may, in truth, be applied to the object of her affection.

THE DWELLING.

In the country, the dwelling-house should be placed on elevated ground, so as to have the advantage of surface drainage. If a few large shade-trees are in close proximity to it they will serve to keep off the sun's rays during the warm days of summer.

If the site be an agreeable one, and if the house itself be built with due regard to appearances—having some ornamentation about it—the family will be happier and more contented than if their dwelling is devoid of those adornments that are necessary to render country homes pleasant and desirable. If to such a place are added well-arranged and carefully-kept grounds, filled with evergreens, shrubbery and flowers in their season, a home will be created to which children will become strongly attached.

Every dwelling ought to be constructed with a view of enabling its inmates to enjoy good health. The foundation

should be placed on dry ground, and there should be no wet cellar under the building to breed disease and pestilence. If a cellar is built under a dwelling it should be cemented and kept dry. It is best to have the cellar placed under that part of the house not occupied by the family for living or sleeping purposes. Decaying vegetables and other refuse matters are prolific breeders of disease, producing germs that tell fearfully on the health of those living over or beside them. Too much care cannot be taken in keeping cellars dry, and cleaning and disinfecting them with lime at frequent intervals.

No cess-pools should be allowed near the house. The laundry suds and refuse water from the kitchen should be deposited at some distance from the dwelling and disinfected during the summer months.

Privies must not be permitted to become offensive; the vaults should be deep, and during hot weather their contents ought to be frequently disinfected with a solution of copperas.

The inside of the dwelling should be arranged with a view to health as well as to comfort. But few houses in the country are heated by means of a furnace and hot-water or hot-air pipes. Too many of them are warmed by the use of closed stoves, which provide no means for ventilation. Such stoves are highly objectionable, not only because of their lack of ventilating qualities, but also for the reason that a room thus heated cannot be kept at an even temperature. The open fire-place, or a grate, is preferable to all other means of heating a dwelling, but if stoves must be used, they should be of the open-faced or Franklin pattern.

The practice of placing water-closets in the body of dwellings, so common in our large cities, is fraught with the greatest danger to the health and lives of those who inhabit such houses. No matter how carefully and skillfully con-

structed the plumbing may be, some of the gases may escape into the house. Persons subjected to the breathing of such mephitic gases are liable to suffer from typhoid fever, diphtheria, and kindred diseases.

In all cases the water-closets ought to be placed outside of the main portion of the house. An ell can be constructed with a transverse hall-way—with windows having movable sashes at each end—dividing the main building from the rooms containing the water-closets. By keeping the windows at each end of the hall slightly open, sufficient air will be admitted to carry off all poisonous gases and prevent them from entering the living apartments.

The School-House.

Diseases of various kinds are often contracted in school-rooms. In the country, school-houses are not infrequently heated by means of closed stoves, and as a result the air becomes dry and often over-heated. The temperature is subjected to sudden and great variations, being at times entirely too warm, while at others it is so cool that the pupils complain of the chilliness. If a stove is used, one with an open face should be selected. By paying careful attention to the heating of such a stove, and to the proper ventilation of the room, the air may be kept pure and healthy.

Ventilation can be secured by slightly dropping the sash of two or three windows on one side of the room. If windows on both sides be lowered, a current of air will pass through the room, rendering the pupils liable to take cold.

In many places, school-rooms are allowed to become too warm. The children soon begin to perspire freely, and going out into the cold air, they become chilled. Such exposure often produces colds, bronchitis, or pneumonia. Much of the sickness among children in country districts

during the winter season is chargeable to the extreme heat and bad ventilation of school-rooms.

In cities the school-buildings, although by no means perfect in this respect, are better heated and ventilated than they are in the country. Some of the children are often placed too near the heating apparatus, and as a result become so warm as to perspire freely. They then go out into the open air, where the perspiration is suddenly checked, causing, in many cases, affections of the air passages.

Sometimes, when the air becomes too warm, or too close, a window is raised for ventilation, and those pupils who sit near it are apt to take cold from the current of cold air that enters through the raised window.

A thermometer should be placed in every school-room, and the teacher should see that the temperature is kept between 65° and 68°. If this were done, a prolific source of disease among children would be avoided.

Contagious diseases are often contracted in the school-room. If a child becomes sick with scarlet fever, measles, or other contagious disease, there is danger that other children in the room will suffer from the contagion. A strict enforcement of the rules adopted by the health departments of our cities, together with care on the part of parents not to send their children to school when out of health, are the safeguards against the dissemination of contagious diseases among school-children.

The health of many children is seriously impaired—sometimes permanently—by over-taxing their brains with too many or too hard studies. Parents are often to blame in this matter—their vanity leading them to encourage their children to undertake advanced studies before their minds are sufficiently matured to grasp them.

The practice of frequent examinations at school should be discountenanced. Pupils often worry and fret over such

examinations until they are made nervous and sick. Girls are especially liable to suffer from these causes, and in some instances their health is permanently impaired. Instead of developing into healthy, robust women, they become weak and delicate creatures, and suffer from various kinds of nervous complaints.

BATHING.

A child should be bathed every morning during infantile life, by placing it in a vessel of water and thoroughly washing it. If properly done, there is no danger of its taking cold, and in this manner the body can be cleansed in a short time. Of course, the temperature of the room should be carefully regulated, and no draught of air must be permitted to pass over the child.

Occasionally, however, children are afraid of being dipped into water, becoming greatly alarmed at the process, and expressing their fears by frightful screams. Sometimes a child's fear of the bath can be overcome by wrapping it in several thicknesses of soft flannel and gently placing it into the water. By this method, the wrappings become gradually soaked with water and there is no shock communicated to the child, as is the case when, in a naked state, it is suddenly plunged into the bath.

When for any reason it is not advisable to place the child into a vessel of water, the sponge bath must be resorted to as a substitute, and although not equal to the former method of bathing, yet it will serve to keep the skin clean, and, if carefully done, there is no danger of the child taking cold from the sponging.

In using both the dip and the sponge bath, the nurse should see that the bathing is done quickly, and that the naked body of the child is exposed to the air but for a moment. When taken from the bath it must be immediately

enveloped in a warm, dry blanket, and thoroughly dried with a soft cloth.

If the sponge bath be used, the child must be covered with a fold of the blanket and only so much of its body exposed at a time as is undergoing the process of sponging. The nurse should use a soft sponge and the best castile soap. But, above all things, the room must be comfortably warm and no current of air permitted to pass through it.

During the first months of infantile life, the temperature of the water should be a little above blood heat; but as the child grows older, the temperature can be gradually reduced, so that after the ninth month the bath need not be warmer than its body.

Some physicians recommend that cold water be used for bathing young children; but in some cases it is certainly hazardous, and, in the hands of careless or inexperienced persons, may be quite dangerous.

It is doubtful if, in ordinary cases, cold baths offer any advantage over warm ones, and they are surely not so safe. If cold baths are used in infancy they should always be given under the direction of a physician, who should see that his instructions are strictly obeyed.

The belief entertained by some nurses that a cold bath each day is necessary to "harden" a child's constitution is not only erroneous but dangerous if carried into practice. While it is possible that children who have been treated in that manner may be hardy and vigorous when they arrive at adult age, it proves by no means that the cold bathing gave them their hardiness, but rather that they were naturally vigorous infants; otherwise they would have perished from such a practice, for it is more apt to destroy than to benefit infants that are naturally feeble and of delicate constitutions.

In addition to the bath given each morning, when the stomach is empty (for a bath should not be taken soon after

a meal) the child should have a good washing at night before it is put to bed.

During the day, and in most cases at night, the diaper should be removed soon after it has become soiled with urine or discharges from the bowels, and, with a wet sponge, the parts should be well cleansed, and carefully dried with a soft cloth. Merely wiping the child with a part of the soiled diaper, as is often practiced, is not sufficient. Inattention to these matters will give rise to "chafings" and excoriations—a condition both troublesome and painful.

The skin of a young infant is tender and sensitive, and the greatest care and gentleness should be exercised in drying it after a bath. Rough, or too long-continued rubbing, besides being painful, may produce inflammation and eruptions of various kinds. With a soft cloth of well-worn muslin, the nurse should quickly wipe the several parts of the child's body, which can be done under a light blanket by lifting the blanket with one hand, while the cloth, held in the other, is gently and smoothly passed over the body. After this has been done, the skin will still be damp, and hence another dry cloth should be used for the final drying.

Care should be given to the arm-pits, groins and nates, which should not only be well dried, but, if the child be very fat, should be dusted with powdered starch, or "baby powder" contained in a muslin bag.

In discharging these duties the patience of the nurse should never become exhausted; she should be gentle and kind, and should refrain from an exhibition of anger or impatience. Rude shaking or jostling the child, as well as scolding or speaking in a harsh voice, must not be countenanced. Rough jerking may do it bodily harm, while the angry expressions of the nurse, and the harsh tones of her voice, will soon be noticed, and the temper of the child may be sadly affected.

SLEEP.

During the first two months after birth a child ought to sleep by the side of its mother. Its feeble power of generating heat, and its great susceptibility to the influence of cold, render this necessary. But if it is very restless, and its sleep is greatly disturbed, it will be best to let it lie beside some other female. Once or twice during the night, and early in the morning, it should be taken to its mother's side for the purpose of giving it the breast.

A restless child will keep its mother from much needed rest and sleep, and for this reason it should be put in care of another female during the hours of the night, so that its mother may have sound, refreshing sleep, so necessary in her enfeebled condition.

After a month or six weeks have elapsed, a child, if it be healthy, may sleep alone in a basket, cradle, or cot.

Care must be taken that the child has enough, but not too much, light, warm clothing, and that the room is of a proper temperature, *i. e.*, from 65° to 68°. While cold rooms and all draughts of air should be avoided, an atmosphere that is too warm is equally dangerous. In these matters good judgment must be exercised, as a young infant has but little power to resist the effects of cold air, or to overcome the changes in the circulation produced by sudden transition from heat to cold.

In young children the temperature falls from one to two degrees during the evening and night, the lowest being at about two o'clock in the morning. From this hour it begins gradually to rise.

As the temperature of the body during the night is naturally lower than it is during the day, it can be readily understood that the child should not sleep in a cold room, since its vital powers would be still further depressed, thus leading, in some cases, to diseases of a serious nature.

If draughts of cold air are allowed to pass over the child while sleeping, or if the temperature of the room is too low, or the covering insufficient, a severe cold in the head, or perhaps an attack of pneumonia, may result. On the other hand, if the room is too warm, or the covering of the child's bed too heavy, the same result will probably follow.

Covering the child's face with a handkerchief or other article must be avoided, as the nose and mouth should be exposed so that it can breathe pure air freely.

Narrow cradles with high sides should not be used, for the reason that if the child lies upon its side there will not be sufficient room for it to breathe freely.

For the first two or three years the child should lie upon feathers, and the most scrupulous care must be taken to keep the bed clean and dry. Frequent exposure of the bed and bed-clothes to the open air is necessary.

During the whole period of childhood much more sleep is required than in adult life. From the second to the fourth year the child should sleep an hour or two before dinner, and from seven or eight o'clock in the evening until the following morning.

No precise rule can be given as to the amount of sleep that each child requires. Much will depend upon conditions peculiar to each one; but it is well to remember that infants pass the greater portion of their time in sleep, while older children sleep from twelve to fourteen hours during each day and night. The school-boy usually requires ten hours, while in youth most persons will sleep eight hours. In old age many do not sleep more than six hours.

With children, as with adults, regularity in sleep is of the greatest importance, and the mother should permit nothing to interfere with it. The child ought to be permitted to awake of its own accord in the morning, after which it should not be allowed to lie in bed any longer.

On no account should a child be suddenly or violently awakened; but if it be necessary to disturb its sleep, it should be done in the gentlest manner possible.

A mattress is much better than a feather bed for a child to sleep upon after it has passed its third year.

The bed, after a child has vacated it in the morning, as well as the bed-clothes, should be thrown over a chair where they can be well aired, the windows being opened for that purpose and also to ventilate the room.

Children should, if possible, sleep alone, and on no account should a child be permitted to sleep with a sick person or with those who are far advanced in age.

DRESS.

A child's dress should be light, of easy fit, and warm enough to protect the body from the impression of cold. The body must be well covered, for to leave the neck, chest, arms and legs of a child bare is to invite disease and death. The material and quantity of clothes should be adapted to the season of the year and the physical condition of the child.

While, therefore, the body of a child, including its neck, chest, arms and legs, is protected, it must not be too warmly clad by being enveloped in innumerable folds of clothing or kept confined in very hot and close rooms; for nothing so tends to enfeeble a child's constitution, to induce disease, and render the skin highly susceptible to the impressions of cold, as dressing it too warmly or confining it to rooms that are close and hot.

In country districts mothers who visit their neighbors in cold weather often prepare the child for the visit by wrapping it in a shawl and a blanket, and perhaps also a bed-quilt or a bed-comfort. It has enough wrappings for two or three little ones, and when it reaches its destination and the

coverings are removed it is profusely bathed in perspiration. Often a sudden cold is developed, and croup or pneumonia results, while the poor mother wonders how the child could possibly have taken cold, as she had it wrapped up so very warm!

Instances of the kind have often come under my own observation, and it has been very hard to convince the mother that she caused the child to take cold by putting too much clothing around it.

In the early months of infantile life the skin is very delicate, and it will be best to put on a shirt of fine muslin (not starched) next to the skin, and over that should be worn a flannel garment. The outer dress may be of calico.

After the child has become a few months old, and especially if it be suffering from diarrhœa or other bowel troubles, flannel must be worn next to the body. In warm weather the thinnest and finest white flannel should be used; but in cold weather it may be thicker and warmer.

The dress should be so made as to put no restrictions on the use of the child's limbs. It must fit easily and loosely, being large enough to afford room for growth, which in young children is rapid. The clothing must not fit tight around the neck, armholes, chest and wrists. It should be so made as to be easily taken off or put on, as dressing a child is fatiguing to it, and should be done quickly. Some mothers tack every part of the clothing that needs fastening with needle and thread, thus dispensing with the use of ordinary pins, which are apt to pierce the child's skin and cause pain. The patent safety-pins, however, are not liable to this objection. The diapers can be fastened with loops and tapes, and should be made of soft canton-flannel with a good nap on it. These will be soft and non-irritating, and if they be changed as soon as they are soiled there will be no danger of the child taking cold from their use.

The clothing should be changed often. Cleanliness absolutely demands this, and it must be remembered that the wearing of soiled garments is productive of skin diseases of various kinds.

If proper care is taken to prevent young infants from taking cold, and if the directions given in this book are carefully followed, there will be no necessity for the use of caps; indeed, the probabilities are that there is more danger in the changing of caps, or in leaving them off at times, than in dispensing with them altogether.

The dress in childhood should possess the same properties as in infancy. It should be warm, light, and so loose that no part of the child will be constricted by it.

The whole body must be well covered, as by exposure of the neck, chest, arms or legs, the child is liable to contract croup, or pulmonary disease. Indeed, it is quite likely that the foundation for consumption is often laid in early childhood by needless exposure of the arms and chest.

The good sense of the mother will teach her that the child should be clad warmly in cold weather, and lightly in warm weather; but sudden changes from warm to light clothing should not be made. The winter dress should be resumed early in cold weather and laid aside late in the spring.

Healthy children can wear cotton goods next to the body during the warm months and flannel during the cold months. But if the child be sickly or disposed to consumption or scrofula, it must wear flannel next to the body at all seasons, except, as before remarked, when the flannel irritates the skin. In such cases a shirt of thin, fine linen can be worn, and over it the flannel garment.

EXERCISE.

After the close of the second month, if the weather is warm and dry, the child may be taken by the nurse into the

open air for a short time. The dress must be varied from that worn in the house, the head being covered, and the feet carefully protected from the cold. The nurse should take the child in her arms in such manner as to afford support to the body and head. This plan must be adhered to until after the third month, when the child will be sufficiently strong to maintain itself in a sitting position. None but trustworthy nurses should be entrusted with this duty, as the most serious consequences may result from laying the child on the ground, or subjecting it to a draught of cold air. Placing the infant upright on the knee, and jolting it violently up and down, as is sometimes done, may produce very serious results.

If the child is born in late autumn or winter it will be best to wait until the warm weather of spring before taking it out into the open air. If the temperature and ventilation of the rooms have been properly attended to, no harm will result from deferring the out-door exercise. As the child grows older it may be placed in a baby carriage, on a comfortable pillow, and wheeled out in the open air for a short time each clear, warm day. The face should be shaded, as the sun's rays are not only a source of discomfort and annoyance, but are highly injurious to the eyes. But carriages should be dispensed with if the child is not well—especially if it is suffering from bowel complaints. In such cases the out-door exercise must be taken in the arms of a careful nurse.

During very warm days the open-air exercise must be taken early in the morning and just before night-fall.

As a rule, no attempt should be made to teach the child to walk at a very early date, and the many contrivances made to accomplish this purpose are mischievous in their tendencies. The bones in early infancy are soft and bend easily if too much weight is placed upon them. Therefore, if the child is placed upon its feet too early, and kept in that posi-

tion too long, the bones of the legs will bend under the weight, constituting the deformity known as "bow legs." In the same manner a bending or curvature of the spine may be caused by too early and long-continued attempts to teach a young child to walk.

A child soon learns how to walk itself, and does not require to be taught. It first learns to crawl, thereby using most of the muscles of its body. This exercise does not fatigue it and does not throw undue weight upon the bones, but imparts vigor and strength to the frame. After awhile it will endeavor to lift itself on its feet by the aid of a chair, and, although it will fail again and again, it will continue in its attempt to accomplish its purpose. Soon it will learn to stand by leaning against a chair, and after awhile it will balance itself on its feet without touching any object. Next it will seize anything near it with its hands and take a step or two towards the object to which it clings. This will be repeated, day after day, until it has confidence in its strength and ability to balance itself without support, when it will start off and run alone. If no improper articles are near it, and if its exercise is taken on a soft carpet, the few falls it receives while learning to walk will be unattended with danger.

Exercise during Childhood.—When a child has arrived at sufficient age to take open-air exercise without the supervision of the nurse, it should be permitted, in warm, pleasant weather, to spend most of the day outside of the room. Out-door exercise, under these circumstances, will give it health and strength, and help to lay the foundation for a vigorous manhood or womanhood. To play in the open air is natural to children, and the mother who compels her child to remain in-doors when the weather is fair commits a grave error.

During the winter season the child should be permitted to play out-doors at short intervals when the weather is fair,

care being taken that it is properly clad, and that its head and feet, as well as its body, are kept warm and dry. The practice often in vogue in country districts of permitting children to play out-doors during cold weather without any covering on their heads is dangerous and should be avoided.

If the child is delicate, and disposed to scrofula or consumption, more care will have to be taken of it during the cold season. It must have out-door exercise, but must not be allowed the same freedom in playing in the open air as a strong child.

If the child's strength is not sufficient to enable it to take a proper amount of out-door exercise without assistance, its parents should take it out on horse-back or in a carriage. Good food, warm flannel clothing, and plenty of out-door exercise, will do much towards overcoming a tendency to scrofula and consumption in the young.

The rules here given apply with equal force to girls as to boys. During childhood both sexes should have plenty of exercise, and, as a rule, parents sensibly permit their sons and daughters alike to reap the benefits that are derived from playing in the open air. The unnatural restraint, both in exercise and dress, that is imposed upon girls by their foolish parents, begins after childhood has passed.

As boys grow older they are apt to injure themselves by violent muscular exercise, and parents should caution them against this danger.

While certain kinds of active exercise, if indulged in to a moderate degree, are useful in building up the constitution and giving tone and strength to the body, yet if carried beyond proper limits the most serious consequences may result. Professional rowers often fall victims to heart-disease in early life, the strain upon the heart being so great as to produce organic changes in its structure.

Running and walking against time may also produce incurable disease of the heart and lead to early death. Fast running may not only produce enlargement of the heart, followed by dilatation of the organ, but the lungs also are often injured by such violent exercise. Some of the air-cells may rupture, causing emphysema; or some of the vessels of the lungs may give way, producing hemorrhage or "spitting of blood."

The game of foot-ball, unless moderately indulged in, is not without its dangers, and the American game of base-ball often leads to such changes in the heart and lungs as to be beyond all chance of recovery.

When the heart is injured from over-exertion, it at first attains a large size and becomes irregular, if not intermittent, in its action. Sometimes, though beating regularly when the patient is at comparative rest, it assumes an intermittent action from the slightest physical exertion.

Exercise, to be healthy, and taken for the purpose of giving tone and strength to the muscles of the body, must be moderate and not indulged in too long at a time. It should be of such a nature as will bring into play the various muscles of the body. To use only one set of muscles while exercising only partially fulfills the objects that should be attained. Skipping the rope and rolling the hoop are excellent exercises for young girls, while walking and light running will add to their strength and endurance.

For the weak and delicate there is no exercise equal to horseback riding, and a short ride, two or three times a day, on a gentle horse, will soon be productive of the best effects even in those who are debilitated from such wasting diseases as consumption and scrofula.

CHAPTER IX.

The Mother and the Physician.

I SHALL not attempt to teach mothers how to prescribe for sick children to the extent of doing without the services of a physician. To do so would be to inflict a great deal of mischief on both mother and child. It requires years of study and observation to enable one to prescribe intelligently for sick children; and it is seldom that a mother should attempt to give medicine to her offspring except under the direction of one who is skilled in their diseases.

In the trivial ailments of children, when it is not convenient to secure medical advice, a mother can, if properly instructed, often assist in restoring her child to health without resorting to the use of active medicines. Also, in cases of accidents, such as burns, scalds, etc., it is very necessary that she should know how to proceed in taking care of the sufferers.

Good nursing, proper feeding and ventilation are very important factors in the cure of sickness, and hence considerable attention has been paid to these subjects in these pages.

Before entering upon the consideration of the diseases of children it is proper to treat briefly of the conduct of the mother towards the physician.

As the mother and doctor are brought into such close relations in the management of sick children, it becomes abso-

lutely necessary that the most perfect confidence should exist between them. Having secured the services of the physician in whom she can trust, it becomes the mother's duty to pay strict attention to his advice and directions, and on no account to substitute other remedies for those prescribed by him. She will often be beset by meddlers, who will advise her to use this or that remedy, on the ground that they have seen good results accomplished by it in similar cases. The absurdity of the argument that a remedy should be used because it was seemingly successful in a similar case, is shown by the fact that no two cases are precisely alike. Symptoms are the result of diseased conditions of the body, and diseases of very dissimilar character may give rise to many symptoms that seem to be almost identical. In other words, a certain symptom may be caused by a certain disease in one case, while in another such symptom will proceed from an entirely different cause. Then, again, the constitutional peculiarities of the patient may render it inadvisable in one case to prescribe a remedy that in another would be beneficial. The observant physician carefully studies the personal peculiarities of each patient, as well as the precise nature of the disease that he is called upon to treat, before he makes up his mind to administer any remedy. This requires a thorough knowledge of disease, as well as of the action of medicines, and no one unacquainted with these matters should assume the responsibility of prescribing for sick people if the services of one skilled in the treatment of disease can be obtained.

If those who are ignorant of diseases and of the action of remedies would only reflect on the responsibilities they assume, and the great harm that may follow their well-meant but injudicious suggestions, there would be less interference by non-professional persons in the management of the sick than is now the case.

Some persons will advise the mother to discharge the physician in attendance and employ another who, they declare, has particular skill in such cases. No wonder that the mother becomes confused when surrounded by so many advisers, each one assuring her that unless a change of physicians is made the child will die, and each one giving different advice. The best thing to do is to pay no attention to any of them. The mother, having selected a medical attendant, should stand by her choice unmoved by those who have no special interest in the welfare of the patient and no ability to judge of the qualifications of medical men. In some cases it may be advisable to call into consultation some other well-informed doctor, but under no circumstances should the mother allow the advice of her visitors to have any influence with her in making a change of physicians. If a change is to be made, it should be solely on the responsibility of the parents, who have the most interest in the life of the child. If the medical attendant is an upright, honorable man, with good conscience and a broad view of his duties as a physician, he will, in all cases where he believes that such a course will be beneficial to the patient, suggest the propriety of calling a consultant.

I have often wondered how people, possessed of good sense, could take the responsibility of selecting a physician for others, and insist on his employment in cases already in charge of a medical man; or how it is possible that one knowing himself to be entirely ignorant of the science of medicine can advise that the medicines prescribed by a physician be set aside and others substituted in their place.

If anything occurs during the sickness of a child to shake the confidence of a mother in the physician's skill or knowledge of the case, the best course for her to pursue is to plainly and frankly state her fears to the doctor and ask for a consultation. No honorable physician can refuse such a

request, nor can he justly censure the mother for her fears and anxieties. The physician has a right to demand fair and frank treatment, but he must admit the right of every mother to employ whom she pleases to attend upon her child.

If a mother becomes dissatisfied with the treatment employed during her child's illness, and instead of a consultation she prefers that another physician shall have entire charge of the patient, she should so inform the medical attendant, who will forthwith retire from the case.

It is often given as a reason for demanding a consultation that "two heads are better than one." This is usually erroneous as applied to the treatment of a sick person. "No one dreams of trusting a ship to two captains, and I have not read that empires have ever prospered under several masters."

In cases of grave diseases, where two or more physicians are in attendance, unless they are of one opinion on all matters connected with the case (which rarely occurs), the result is usually a vacillating course of treatment, and a shifting of responsibility from one to the other, to the patient's detriment. This is in striking contrast to the course pursued by the able and self-reliant physician, who, having sole charge of the patient, feels the responsibility that is thrown upon him, and who, in the presence of the patient or elsewhere, bears his case in mind, gives it his best thought, and bends every energy of his mind to the accomplishment of a cure.

Still, it is true that cases do arise where more than one physician is needed, but they are not common; and when they do occur the medical attendant will usually suggest the propriety of calling a consultant.

In employing a consulting physician always select one that is on friendly terms with the medical attendant. To do otherwise may endanger the patient's welfare, for the reason that the physicians, being unfriendly, will not likely be in accord as to the best method of treating the case.

The best plan to pursue is to select the physician of your choice, and when he has once taken charge of the case give him your full confidence, rely upon him, and let him know that you wholly trust to his skill. If you distrust him do not let him know it unless you have made up your mind to dispense with his services. Nothing embarrasses a true physician more than to know that his patient, or the patient's relatives or friends, doubt his ability. It renders him vacillating, and robs him of that decision and prompt action which are so necessary in treating the sick.

But few persons have any conception of the labor and anxiety connected with the practice of medicine. To get out of a warm bed and ride many miles in the country on a cold night is usually considered the greatest hardship that a physician undergoes. But this, disagreeable as it is, does not constitute the worst phase of professional life. The worry and anxiety that are inseparably connected with the care of very sick patients render the physician's life one of constant dread and uneasiness, and deprives him of many of the pleasures enjoyed by those who pursue other avocations. Besides, he has no time that he can call his own. He is, to a great extent, deprived of the pleasures that grow out of social intercourse, and his attendance upon church and public amusements is liable to be interrupted at any time. When he has very sick patients under treatment, the ring of his door-bell startles him with the fear that some one is worse; and at each visit, when entering the house of the sick, he carefully scans the countenance of each one whom he meets, hoping to gain an index of the patient's condition.

People sometimes put physicians to a great deal of unnecessary trouble, causing them to lose much valuable time. In case of an accident to some member of a family it is not uncommon to dispatch messengers to different physicians, with the request that they come immediately to

the patient's assistance. The result is that perhaps three or four doctors hurry to the patient's house, when the services of one only are needed. Of course, those who are not needed return in bad humor, feeling that their time has been trifled with.

When an emergency requires the prompt services of a physician it is best to dispatch a messenger for the family physician if he be near at hand; but if he cannot be had, the messenger should be instructed to call some other physician. By trusting to one messenger, instead of sending two or three, but one medical attendant will be summoned, and much embarrassment and ill-feeling will be avoided.

If the patient be suffering from dangerous hemorrhage (about the only kind of a case where immediate assistance is necessary to save life), some non-professional person can make pressure upon the bleeding point, or else use the tourniquet as described in the chapter on hemorrhage, until the physician arrives.

When two or more medical men are summoned to a case at the same time, the first one that arrives should have charge of the patient until the arrival of the family physician, when the control of the case should be given to him.

While a physician should cultivate a cheerful bearing in the sick-room, thus rendering himself agreeable and pleasant to all with whom he comes in contact, he should never for a moment forget the dignity of the position he occupies and the great responsibilities that rest upon him. While it may be best to yield to a certain extent to the little whims and caprices of patients under some circumstances, his orders and directions should be insisted upon when there is any important matter at stake, and especially when the enforcement of his instructions is necessary to the welfare of the patient.

The physician should possess a discriminating judgment, coupled with a large amount of good common sense. He should be moral, upright and truthful—a man in whose word the most implicit confidence can be placed. He should be studious and attentive to his business, remembering that the practice of medicine affords an ample field for the exercise of all the mental faculties of even the most gifted. If to these virtues he has added a liberal education in his profession, and a proper amount of experience at the bed-side of the sick, he may justly lay claim to the title of a true physician—one in whose skill and knowledge the afflicted can trust in the darkest hours of pain and suffering.

In all cases of sudden and severe attacks of sickness, a physician should be hastily summoned; but the mother should not become unduly excited and attach too much importance to the *trivial* ailments of her children. Upon her child showing a slight indisposition, a young and inexperienced mother often becomes greatly excited and immediately dispatches a messenger for the family physician, bidding him come immediately, as the child is thought to be dying. It may be that he is engaged in the examination of a case that will require some time to complete, but relying upon the truthfulness of the message sent him, he asks his patient to excuse him, making another appointment to complete the examination. When he arrives at the house to which he is summoned, he finds that there is but little the matter with the child, that his visit was unnecessary, and that his time had been trifled with. Of course, the mother tries to convince him that the child was dangerously sick, though better now. He goes back to his office in bad humor, and the next time he is summoned by the same mother he is not so prompt to obey; and there may come a time when he is really needed without delay, but having been so often de-

ceived he does not believe it, and therefore postpones his visit until it may be too late.

"It is not enough to have chosen a good physician, one who repays in cleverness and zeal what is accorded him of affection and trust: you must know how to make use of him. A physician, strong in his own convictions, and earnest in his work (and, very fortunately, there are many such), is a delicate creature to manage. He is easily exalted or cast down. A word of unmerited distrust draws him down from enthusiastic duty to *mere* duty; a word of trust and attachment increases his zeal tenfold. . . . Your doctor's care of you depends on yourself, be it remembered, and the best way (I will say the only way) of getting yourself well taken care of is by giving yourself up unreservedly to the one you have chosen, leaving to him the whole responsibility, without hindering his action by any ill-timed and meddlesome interference.

"An affectionate indulgence must be shown him; he meets with so many dreary experiences in his career that he really has some rights of which he has reason to feel tenacious. . . . One specially important thing is not to abuse a physician and cool his zeal by trivial calls, thus running the risk of his indifference at a time when his services shall have become really necessary. Physicians are accused of being *thin-skinned*, and in a general way that is true enough. But in whom was it ever more excusable? The sensitiveness of mere self-love is puerile, and not worth talking about; but that which is rooted at the same time in scientific conviction, in a sense of responsibility, and in conscientious anxiety, is worthy of consideration and needs careful management. A physician who is not *sensitive* is apt to be *indifferent*, and the mediocrity of his services offsets his easy-going ways."

A child's sick-room should be properly ventilated. Pure, fresh air in a room is always salutary; but currents of air

must be avoided. Sufficient air from the outside can usually be secured by raising the lower sash of a window two or three inches and accurately fitting a board in the space below the raised sash. This arrangement permits the air to enter the room where the upper and lower sashes meet in the centre of the window. It is a good plan to have two rooms communicating with each other, keeping the door between them open. The room occupied by the patient can then be ventilated by admitting fresh air into the adjoining one, thus overcoming any danger of producing currents near the patient's bed.

Quiet is essentially necessary in a room occupied by a sick person. Loud talking, heavy walking, causing the room to shake, slamming of doors, and similar noises, disturb the patient and prevent sleep. Whispering, so frequently heard in the sick-chamber, constitutes one of the most annoying sounds that can fall upon the patient's ear. A sick person should seldom, if ever, be aroused from a natural sleep. As sleep is a potent factor in the restoration of a diseased body to a condition of health, it is important not to interrupt nature's process of healing by waking those who are enjoying the benefits of a calm slumber.

The visits of friends to the sick-room should not be encouraged. A good nurse to aid the mother in caring for the child is the only one whose attendance is advisable. Visiting friends can do no good, and usually do a vast deal of harm. They are prone to comment on the case, and often assure the mother that they have seen cases precisely like it which ended in death. Many such persons insist on giving some medicine, of the effects of which they are grossly ignorant, in place of that prescribed by the doctor. It seems impossible for some persons to refrain from being meddlesome, and meddlesomeness always works injury to the patient and brings misery to the mother. Therefore, the

mother should insist on the exclusion of visitors from the sick-room, so that quiet, which is a necessity even if the patient be an infant, may be secured.

It often happens that great trouble is experienced in getting children to take medicine. If a dilly-dallying course be pursued, the child becomes exhausted by fretting and resisting the nurse's importunities to get it to take the medicine willingly. Sometimes deception is resorted to to overcome its scruples. The child is told that it is sugar or some other sweet substance, in order to get it to swallow a drug which may be bitter. This is wrong, and cannot be successfully practiced a second time. The nurse should call things by their true names, and in no event try to deceive the child. The medicine should be given promptly and without much ado. To wait for a child to "make up its mind" to take it is useless; it never makes up its mind, and the struggles and worry that result from such a course tend to exhaust the patient's strength. Therefore, when the time comes to give a child a dose of medicine it should be given promptly, notwithstanding its indisposition to take it. If the child be old enough to understand the importance of obeying the physician's orders, it may be best to kindly tell him that the medicine is intended to do him good, that the doctor prescribed it for him, and that if he will take it willingly the doctor shall be informed of his good behavior. By proceeding firmly and tenderly, but a few moments will be consumed in getting through with the disagreeable duty, and when once the dose is swallowed the child soon composes itself. No fear need be entertained that the child will become strangled by the medicine if proper care be taken in its administration.

The nurse must be watchful of the symptoms and conditions of the child during the intervals between the physician's visits, so as to give him a correct report upon these

matters at each visit. It is not only necessary that he should see the condition of the patient at the time of his visit, and carefully note each symptom then present, but he must also have a knowledge of what has occurred during the time he was absent. For this information he must rely upon the nurse, who, if she has been observant, can readily answer his questions.

The greatest care must be observed in feeding sick children. An error made by giving indigestible or otherwise improper food may of itself be the cause of death in some diseases. Hence, when a physician is in attendance, such matters should be referred to his judgment, and no article of diet ought to be given except upon his advice. If no doctor is at hand to consult, the mother will give it only the blandest articles—such as she knows to be simple and easy of digestion, and those only in small quantities at a time. The stomach of a sick child is capable of digesting but very small quantities of any article, and the mother, knowing this fact, should see that it is not overtaxed with food.

The discharges from the child's bowels must be speedily removed from the room and taken to a safe place and kept for the inspection of the physician. In some diseases it is important that he should have a knowledge of the quantity and character of the stools, and this can be known only by an actual inspection of the child's discharges.

The mother should pay some attention to the child's urine during sickness, and be able to inform the physician of the number of times that it has been passed during his absence, and its amount and color. If it presents any unusual appearance, and the child is old enough to permit of it, a sample should be saved, to hand to the physician for his inspection.

In some diseases of the lungs the matters expectorated by the child should be saved, so that the physician can ac-

quaint himself with their character and appearance. He should also be informed of the nature of the matters vomited by the child.

During the absence of a physician, the sleep of the child should be watched, and any deviation from natural slumber should be reported to him. If it cries out in its sleep, or grinds its teeth, or shows other signs of nervousness, it is important that the medical attendant be advised of it.

In short, the mother should be ever on the watch for any new or strange symptom that may develop in the case, and be fully prepared to give her medical adviser an account of the symptoms observed during his absence.

CHAPTER X.

Signs and Symptoms of Disease.

EVERY mother should possess such knowledge of disease and its symptoms as will enable her to detect any departure from good health in her children. She will thus be able to note the approach of disease and its character, and know when it is necessary to seek the advice of a physician.

To assist her in obtaining such knowledge, the following pages have been written. By a careful study of the signs and symptoms of diseases as herein set forth, a mother will usually be able to tell not only when her child is sick, but also the nature of its sickness.

Attitude of the Child.—A healthy child seldom remains still when awake, but if very young, will amuse itself with its arms and legs, keeping them in constant motion. The face and eyes are constantly changing in expression. As the child gets older it is usually playing with its toys, or else running about and amusing itself in various ways. It is capable of taking a vast amount of exercise in this manner, and when at last it becomes tired, it soon falls into a sleep, from which it awakes refreshed and ready to go through the same routine of amusement.

As soon as a child becomes sick its manner undergoes an entire change; the eyes are dull and heavy, or occasionally (though rarely) extremely bright. It ceases to take any interest in play and lies still and listless, or if it moves at

all, it is in a languid and difficult manner. If it is very young it ceases to rub its mouth with its clenched fists, as it usually does in health, and, its muscles being relaxed, it lies loosely in its nurse's arms, making no efforts to support its body in any fixed position. In some wasting diseases, as diarrhœa, the arms fall in any position by the child's side without any effort on its part to direct them.

The countenance in health is expressive of serenity of mind and body; in disease it is so changed as to indicate to some extent the part of the body affected.

If there is pain in the head the brows will be contracted, and this may be the first symptom of a dangerous affection of the brain. As the disease progresses, however, the eyes will become fixed and staring; the hands will be frequently placed to the head, which is often hot and moved from side to side upon the pillow. The child will grind its teeth, start in its sleep, and may wake alarmed and screaming.

When the lips are drawn apart so as to show the gums, it indicates pain in the abdomen. This pain may be caused by irritation, or colic, the effect of undigested food, or by inflammation of the bowels.

Pain produced by colic is manifested by spells of loud crying, between which the child lies easy and has a natural expression, while the pain that accompanies inflammation of the bowels is continuous and is often expressed by moans. In the latter disease the expression is anxious; the child draws up its legs, and, in advanced cases, it picks at the bedclothes.

If the nostrils are drawn upwards and are in quick motion, the pain is in the chest. This sign is observed in pneumonia, bronchitis, croup and other inflammatory diseases, and is accompanied by quickened respirations which are mostly abdominal—*i. e.*, the child's abdomen will rise and fall with each respiration more than the chest does.

The cries of an infant should be carefully studied, for by this means it makes known its wants. They indicate, to those who understand them, not only that the child is sick, but also the kind of sickness from which it suffers. The first cry that a mother learns to know is that of hunger, and a little observation will teach her to recognize it readily. A hungry infant upon awakening from sleep will put out its tongue, move its head about as if in search of the breast, and, if it sees its mother, will plainly show its joy at the sight. If she gives it the breast it will eagerly take its meal; but if she is not present, or neglects to let it nurse, it will soon begin to cry and keep at it until its wants are supplied, after which it will at once become pacified. If the cry results from pain or sickness, although it may take the breast, yet it will not cease crying for any length of time, but in a little while it will begin again in louder tones than before.

A child suffering from slight discomfort, such as is produced by lying too long in one position, will usually make its suffering known by a low, continuous cry.

The cry of pain and suffering from disease is expressed in various tones.

If a child that has been cheerful and good-natured becomes fretful and peevish, with its fingers continually in its mouth, the indications are that a tooth is making pressure on a tender and inflamed gum, thus giving rise to the pain from which it suffers. If a child cries violently or screams, it denotes either severe pain or passion. If it is from pain and the child is continually drawing up its legs toward its body, it denotes trouble in the bowels. If it gives short, piercing screams, with long intervals between them, and especially if the head be rolled from side to side, it denotes either inflammation of the brain, or ear-ache. The cry from ear-ache, though similar in sound to that from brain disease,

is more prolonged, lasting for quite a time, while the cry from the latter disease is sudden, piercing, and not continuous. The distinction between the two can readily be made by gently pressing on the ear-tube during a period of quiet, when, if there be ear-ache, the child will be thrown into a paroxysm of crying. If pressing upon one ear does not cause the child to cry, the other must be tried before concluding that the pain is not the result of ear-ache.

In diseases of the lungs, the cry is usually labored or smothered; in croup or laryngitis, it is metallic or brassy; and in tuberculous and other wasting diseases, it is of a moaning or wailing character.

If the violent crying is simply the effect of temper, the child will sometimes hold its breath for a long time—until it gets purple in the face—thus adding to the mother's distress. This can be overcome by plunging one or both of the child's hands into cold water, which will produce gasping, and cause it to take a full breath, when the trouble is ended.

Voice.—In inflammation of the tonsils and the back part of the throat, as well as in some cases of diphtheria, the voice will be nasal in character. This nasal tone of voice is present in children with enlarged tonsils, when they are suffering from the effects of cold.

In croup the voice is to a great extent lost, the child being unable to speak above a whisper.

In bronchitis, pneumonia, and pleurisy, speaking is painful, and hence the voice will be, to some extent, suppressed and jerky.

The color of the skin should be examined. In eruptive diseases the neck, breast and arms, as well as the face, should be noticed. In jaundice the skin is of a yellow color, but the best test is the color of the white of the eye, which, in cases of jaundice, becomes yellow before much change is noticed in the skin itself.

The sleep should be carefully watched. A healthy child always sleeps calmly and peacefully. Occasionally it may be noticed to smile in its sleep, which has given rise to the saying that the "angels are whispering to it."

In sickness it may cry out suddenly with or without waking, and may grind its teeth, or give other evidence of more or less pain. The mother should also note whether the sleep is continuous or frequently interrupted, and whether the skin is moist or dry during sleep.

Cough may be a symptom of a serious disease, or it may be the expression of a slight indisposition unattended with danger. A cough without fever, or difficulty of breathing, usually depends upon a simple cold, attended with a slight irritation of the mucous lining of the throat or larynx. Cough, accompanied with fever and difficulty in breathing, may indicate the approach of pneumonia or bronchitis, or if it is hoarse, croup is to be feared. If, with the cough and fever, the child's eyes are watery, and if it is troubled with sneezing, measles may be suspected, and if it has been exposed to that disease the suspicion amounts almost to a certainty.

Long-continued coughs indicate a serious condition of the system. If a child with a persistent cough has been losing flesh for a long time, the probabilities are that it is suffering from some serious disease of the lungs, and this view will be strengthened if it be of consumptive or scrofulous parentage.

Whooping-cough is known by the cough appearing in convulsive paroxysms. The intervals between the attacks may be long or short, according to the stage and severity of the disease, and after it has progressed for some time the characteristic "whoop" will be noticed.

Convulsions may or may not be preceded by premonitory symptoms. Many cases occur without any warning of their

approach, while in others, symptoms of a deranged condition of the nervous system are noticed long before the convulsive seizure takes place.

The symptoms that indicate a liability to convulsions are the constant raising of the child's hands to the head and crying out as if in great pain. When awake the child's senses seem unusually acute, and loud noises frighten it, producing sudden startings. The face changes color frequently and has a peculiar expression. The thumb may be drawn in upon the palm of the hand, or the toes forcibly flexed upon the foot.

Before the occurrence of convulsions we may find the child's head drawn backwards, or an arm may be firmly fixed by the side of the body, or else a leg may be bent upwards, and remain in that position. These are all dangerous symptoms, and indicate disease of a most serious character. These symptoms may continue for a few days before a convulsion occurs. A short time before the convulsive attack, the child becomes unusually quiet; it has a peculiar stare, the eyes being fixed in one direction. In a little while the convulsion begins; the body becomes stiffened; the head is retracted; the arms and legs are rigidly extended; the eyes are turned upwards, and for a moment the child ceases to breathe. In a few seconds the face becomes congested; the eye-balls, with an upward stare, are twitched rapidly in different directions. The tongue is often bitten, and froth, mixed with blood, may escape from the mouth. The muscles of the arms and legs are thrown into spasmodic action, causing them to twitch and jerk with great rapidity.

The condition of the eyes should be noticed. In health they are clear and bright, while in disease they often become dull, giving a heavy appearance to the countenance.

Sometimes in disease of the brain the eyes are, for awhile, unusually bright, but as the disease progresses they lose

their lustre, and in the last stages a film seems to form over them.

When a child whose eyes have before been unaffected is attacked with squinting, or crossed eyes, the most serious results may be apprehended. The trouble may be due to paralysis caused by convulsions, or to irritation situated in the brain or in the intestinal tract. If the squint follows a convulsion, the result of intestinal irritation, it may disappear after the child has recovered from the convulsive attack; but more often it will be lasting, and being caused by a brain lesion, it is, in such cases, a forerunner of death.

The pupils may be either too large or too small. When large, if they contract when a bright light is allowed to fall upon the eye, the probabilities are that the child is suffering from some nervous disturbance of a trivial character. In serious brain disease the pupils, if large, remain so, the light having no effect upon their size. As a rule, when one pupil is large and the other small, serious brain trouble may be feared; but this condition sometimes, though rarely, occurs in children who are suffering from intestinal worms. Inflammation of the iris, by producing adhesions between it and the adjacent structures, may also render the pupil permanently small, but in such cases it is usually irregular in shape.

When both pupils are small and do not dilate when light is excluded from the eye, it denotes disease of the brain, or else that the child is suffering from an overdose of opium.

The condition of the pupils can be easily tested by exposing the eye (the lids being held wide apart) to a bright light, when, in a healthy child, the pupils will contract and become quite small. Then, by placing a hat or other dark object before the eyes, the light is excluded from them, when the pupils will enlarge unless some disease interferes with their dilatation.

Sometimes a child complains of neuralgia affecting an eye and a part of the forehead. Ordinarily this is the result of a simple neuralgia, and not a dangerous symptom. But if with these symptoms the eye squints, or if the upper lid of one eye droops over the eyeball, or if the child has double vision—seeing two objects where only one is present—the probabilities are that it is suffering from *tubercular meningitis*, a disease that is nearly always fatal.

The Tongue.—Inflammation of the mouth and of the stomach produces a red, hot, and dry tongue. In indigestion and irritation of the bowels from worms and other causes, the tongue is coated with a white fur. This white fur should not be confounded with the deposit of thrush, which occurs in patches and is not spread evenly over the tongue. When the tongue is coated with a yellowish fur it usually indicates long-standing derangement of the stomach and liver. A dry, brown tongue is seen in low, typhoid conditions of the system. In diphtheria and scarlet fever the tongue is usually heavily coated with a white fur, and in the latter disease the enlarged papillæ project through and above the fur, constituting what is known as the "strawberry tongue." Dryness of the tongue usually occurs in advanced stages of disease. In addition to being dry the tongue may have cracks or fissures on its upper surface, an indication that the disease is of a grave character. Sometimes the tongue is coated over most of its surface with a white fur, except in spots of irregular shape where the coat has "slipped off," as it were, leaving the spot bare and smooth. This condition usually indicates irritation of the stomach or bowels from worms or other causes.

When a child begins to recover from sickness the fur gradually disappears and the tongue assumes its natural color. This cleaning process should begin at the edge and approach the centre. If, after being heavily coated, the fur slips off

suddenly, the tongue is usually left quite red, with a tendency to dryness, and in most cases the fur will again form upon it. Patients with such tongues are usually slow in convalescing from sickness.

The pulse, if rightly understood, gives important information in diseased conditions. The mother should familiarize herself with the subject by studying her child's pulse in health and in disease.

With the middle and index fingers of the right hand upon the child's wrist, over the radial artery, and a watch held in the left hand, the number of heart beats per minute, as shown by the pulsations in the artery, can be counted.

At first it will be very difficult for the mother to count the precise number of beats per minute, but after a little practice she will have no difficulty on this point. This examination should be made several times a day, and any deviation from the first count should be noted.

The number of pulsations per minute varies so greatly in young children that it is difficult to fix upon any certain number as representing the average. Some authors conclude that in the new-born child the heart beats from 130 to 140 times per minute, while others contend that the average rate will not be over 102.

The mother, by frequent examinations, can ascertain the number of heart-beats per minute, and thus easily detect any increase that may be due to disease.

The examination of the pulse should be made while the child is asleep, for when awake the pulse is liable to be increased by many causes not connected with sickness. The mother should also notice whether the pulse is regular or irregular. If it beats several times at regular intervals and then misses a beat, she should make a note of this fact.

In fevers and inflammatory diseases the pulse is increased in frequency. In bronchitis and in heart troubles it is often

irregular or intermittent. In brain diseases it is usually increased in frequency, but in advanced stages it may become slow and sometimes intermittent When sleeping, the pulse is slower than when awake.

The pulse should be counted when the child is awake and in a placid mood as well as when it is asleep. A startling sound, or anything else that frightens a child, will increase its pulse-rate.

Sometimes the beats can be counted only with great difficulty in one wrist, but are easily felt in the other. Persons often say that they have no pulse in one arm, or that it is weak, when, in fact, it is as strong in one wrist as in the other; but in one the artery lies deeper than in the other, and, of course, it is felt with less distinctness than in the wrist where it is nearer the surface.

In most diseases the pulse is greatly quickened, being increased in proportion to the severity of the complaint. This, however, is not always the case, for in some of the most serious forms of brain disease it is sometimes extremely slow. Also, in some cases of jaundice it is far below the normal standard.

The temperature of the body is readily obtained by means of a thermometer, the use of which is easily learned. The instrument should be placed in the arm-pit or in the child's groin, and kept there for five minutes. It must be placed in close contact with the body, and no air allowed to reach it.

The heat of the body, as shown by the thermometer, should be noted several times a day, and the physician must be informed of any variation in the patient's fever during his absence.

The degree of temperature enables one to determine with accuracy the febrile condition of a patient; but it does not, in all cases, indicate the degree of danger to life that may be present.

A long-continued and high temperature depresses and weakens all the organs of the body, leading in some cases to death from paralysis of the heart. But in some forms of brain disease, the temperature as well as the pulse is no criterion of the severity of the attack, or the danger that may surround the patient. In such cases we look to other phenomena to enlighten us as to the patient's real condition.

The same degree of disease produces in children a higher temperature than in adults; hence a very high temperature in the former may not be attended with as much danger as in the latter.

In the beginning of scarlet fever and pneumonia, the temperature usually becomes very high at an early period. In typhoid fever it gradually increases during the first four or five days, being about two degrees higher in the evening than in the morning. In inflammatory diseases and in continued fevers, a steady and continuous fall in the evening temperature for a few days, if the other symptoms become milder, indicates the beginning of a favorable termination of the case.

A little while before death the temperature may take either a sudden rise or fall of several degrees. In death from peritonitis and diseases attended with great exhaustion, the temperature often drops below the normal standard some hours before the fatal issue.

The Respiration.—A respiration consists of two acts—first, inspiration, or filling the lungs with air; second, expiration, or emptying the lungs of air. The latter act requires a little more time for its completion than the former.

In a healthy person there are four heart-beats to one respiration. Thus, a healthy adult will respire eighteen times per minute, while his heart will beat four times as often. As a rule, this proportion is kept up in disease, but many exceptions may occur.

Thus, diseases of the heart, or of the respiratory organs, will usually interrupt the relation that one bears to the other in health. In all inflammatory conditions there will be some increase in the number of respirations, but in pneumonia, bronchitis and other diseases of the chest, they will not only be greatly increased, but will also be labored, the breathing being difficult and painful.

To count the number of respirations per minute in a child is very difficult, except when it is asleep, and therefore, if possible, it should be done at that time. While sleeping, the child's breathing will not be affected by external influences, and hence the respirations at that time will be a truer index of the condition of the lungs than when it is awake. The respirations can easily be noted by placing the hand under the clothes and upon the lower part of the child's chest. At each inspiration the hand will be raised, and at each expiration it will be lowered. The mother can count the number of times the hand is raised in a minute, and this will give her the number of respirations.

CHAPTER XI.

Diseases of the Mouth, Throat, and Air-Passages.

SORE THROAT, OR PHARYNGITIS.

SORE THROAT is usually caused by exposure to cold, and although it is seldom a dangerous affection, yet if neglected, and if the child is still further exposed to the cause that produced it, disease of a serious character may result. In that form of sore throat known as follicular pharyngitis, small specks having a whitish appearance may be seen on the tonsils, causing the mother to fear that her child has diphtheria.

Sore throat (simple pharyngitis) begins with restlessness, irritability, fever and slight cough. If the child is nursing, it will likely refuse to take the breast, because of the pain produced by swallowing; if older, it will complain of pain in the throat. The fever may be slight, or of considerable intensity, in which case the face will be flushed and hot. The child is usually drowsy and cross, requiring the nurse to hold it in her lap while it sleeps. The breathing will be fast or hurried, but not difficult or oppressive, unless the windpipe is affected. The pulse will be quick, but regular. If there is much fever the thirst may be great, but owing to difficulty in swallowing, caused by the sore throat, the child will drink but little at a time. If there is no trouble in the windpipe the voice will be natural unless there is some en-

largement and inflammation of the tonsils, in which case it will be thick or muffled, and the child, while sleeping, will snore loudly.

If the tonsils be chronically enlarged, the loud snoring and thick voice will be permanent; but if the swelling be due to the acute attack, these symptoms will subside when the inflammation disappears.

An inspection of the throat will usually enable one to tell whether the patient has pharyngitis, or diphtheria. If it be the latter, the peculiar deposit of that disease will be seen in the throat within a few hours after the beginning of the attack. The deposit of diphtheria consists of white patches, that adhere firmly to the parts. These patches may at first be rather small, but in a little while they become quite large, in some cases forming a continuous membrane covering the whole of the back part of the throat, the tonsils, and the roof of the mouth. In other cases they are limited to the tonsils and a part of the throat.

Sometimes in simple sore throat white specks can be seen scattered over the tonsils and adjacent parts. These specks are small, and instead of consisting of a false membrane, as in diphtheria, they are, in fact, little white points of ulceration. This condition is known as *follicular sore throat*, and is not, like diphtheria, a very dangerous disease. The affection is often mistaken for diphtheria, and it is owing to this fact that we often meet with children that are supposed to be peculiarly liable to diphtheria, having had, according to their mother's belief, perhaps a dozen attacks.

When a child becomes restless and feverish, with other symptoms indicating sore throat, the mother can with the handle of a teaspoon make firm pressure on the tongue to hold it down and expose the affected parts. The child's hands must be firmly held to keep them out of the way. Pressure upon the tongue will cause the child to "gag,"

permitting a hasty view of the diseased structures. It will require a little experience to enable one to see all the parts at one inspection, and if the first examination does not satisfy the mother as to the condition of the throat the operation must be repeated. As this examination is disagreeable and annoying to the child, it should be completed as soon as possible.

If the throat is red and inflamed, and no white spots can be seen, the inference is that the child has simple pharyngitis, and no further inspection need be made for several hours.

If small white specks are discovered, the case is likely one of follicular sore throat, and but little anxiety need be felt; but if white patches of some size be noticed, and especially if the tonsils and other parts be fully covered with a white deposit, the disease is probably diphtheria, and the services of a physician must be secured without delay.

The treatment of an ordinary sore throat from exposure to cold is simple, and in many cases can be left to the intelligent mother.

In ordinary sore throat a liniment composed of hartshorn, sweet oil, and oil of cinnamon, can be frequently used over the front part of the neck and under the jaws, while the child's bowels should be kept open with the syrup of rhubarb or castor oil. If there is much fever, a mixture containing syrup of ipecac and sweet spirits of nitre may be given, in small doses, every two or three hours.

If the child is old enough to gargle, it can use for that purpose a mixture made by dissolving a teaspoonful of tannin in a tablespoonful of alcohol, to which four tablespoonfuls of water has been added. If a half teaspoonful of powdered chlorate of potash be added to this mixture it will render it more efficient. Let the child first gargle with very warm water to cleanse the throat and remove the mucus, so

that the medicine will come in contact with the diseased surface. The gargle can be repeated every three or four hours, and each time after it has been used the child should swallow half a teaspoonful of the mixture, so as to touch the lower parts of the throat.

If the child is too young to use the gargle, the mother can take a soft camel's-hair pencil, and, dipping it into the mixture, brush the inflamed parts with it. Two applications at each sitting must be made—the first to remove the mucus, thus permitting the second one to come well in contact with the diseased surface. After each application to the throat, a few drops of the mixture, into which the brush has not been placed, can be given the child to swallow.

The diet during the treatment should be carefully regulated. Fluids and semi-solids that are nutritious and easily digested should be given.

If, during the progress of the case, the voice becomes hoarse, or the breathing difficult, no time must be lost before sending for a physician; but it should be borne in mind that the breathing may be *fast* or *hurried*, without becoming *difficult*. When the child has a fever it will have quick or hurried breathing; but if croup is present, the breathing will be difficult or hard, the child making great exertion to get its breath.

ENLARGEMENT OF THE TONSILS.

About the termination of the second year of infantile life, many children are affected with enlargement of the tonsils. The disease is apt to attack those who are born of scrofulous parents, although some have supposed that it is more prevalent in children brought up on artificial food than in those who nurse their mothers. Be that as it may, there can be no doubt but that in most cases careful inquiry will disclose the fact that the blood of at least one of the parents was tainted with scrofula.

The disease seems to develop gradually, and usually its existence is not suspected until the child, having taken cold, complains of sore throat and some difficulty in swallowing, attended with considerable fever. Upon examination the tonsils will be found red, swollen, and inflamed, with a few white patches upon them. These symptoms clearly indicate *follicular tonsilitis,* a disease that has already been treated of. In a healthy child, perfectly free from any hereditary disease, the tonsils, after the disappearance of the inflammation, assume their natural size and form, but in those who are scrofulously inclined they remain large after the child has recovered from the acute symptoms. Other attacks will soon follow, for it is well known that children with enlarged tonsils are liable to suffer repeatedly from acute follicular tonsilitis, the trouble being caused in most instances by a common cold that in other children might not produce much discomfort.

The surface of an enlarged tonsil is uneven and often pitted. Sometimes, especially if acute inflammation be present, small ulcerated white spots will be noticed. Usually, however, little specks of a thick, sticky secretion will be seen filling up the cracks and fissures in the tonsil. In chronic cases small lumps of lime are occasionally found lying in fissures that have been produced by former ulcerative action.

When the tonsils are enlarged, the voice is thick and muffled, the hearing is sometimes impaired, and as the posterior part of the nostrils is closed by the enlarged structures, the child is compelled to breathe through its mouth. The breath is offensive, owing partly to the decomposing secretions in the glands and partly to the offensive mucus that clings to the throat.

The tonsils may be so much enlarged as to interfere with both swallowing and breathing. Sometimes the patient can

swallow only small quantities of food at a time, and that is done slowly and carefully.

In many cases respiration is seriously interfered with. At night the child is very restless while asleep, snoring loudly and awaking often to change its position in bed. The closure of the posterior nostrils compels it to keep its mouth almost constantly open, and renders it liable, from external influences, to inflammation of the throat and air-tubes. The obstruction to the entrance of air into the lungs leads to serious changes in the chest walls. In aggravated cases the ribs are sunken so as to render the front of the chest flat, and occasionally there may be a positive depression of the ribs at some point.

The treatment of enlargement of the tonsils, when acutely inflamed (follicular tonsilitis), is given in the article on sore throat.

In the chronic form, or permanent enlargement of the tonsils, treatment by means of medicines administered internally, or by local application, is unsatisfactory; but little, if any, good being accomplished by such measures. Excision with a knife, or other instrument, in cases attended with great difficulty to respiration, is the only treatment worthy of consideration.

It is seldom that this extreme remedy need be resorted to. As already stated, the disease is usually noticed about the second year, and owing to frequent attacks of acute inflammation, due to exposure to cold, the tonsils will likely increase in size until about the ninth or tenth year, when they may cease growing, and as the throat continues to enlarge with the growth of the child, the breathing will likely be less difficult as the patient advances in age. The operation is, therefore, seldom necessary in early childhood. But if the breathing becomes so difficult as to prevent the child from obtaining proper rest at night, thus interfering with

its general health and growth, and especially if there should be signs of flattening, or other deformity of the chest, resulting from an inability to properly fill the lungs with air on account of narrowing of the throat from the enlarged tonsils, the operation should be resorted to at once. The chronically enlarged tonsil is not very sensitive, and the operation of excising it is not very painful, nor is it attended with much danger when skillfully performed.

THRUSH.

Thrush is due to a fungus or deposit of parasitic origin, which attaches itself to the mucous membrane of the mouth.

The disease is quite common in infants that are nursing the breast, as well as those that are artificially fed. It frequently affects children who have summer complaint, and, by its debilitating effect, adds greatly to the danger of that disease. It appears as small white specks, situated upon the inner surface of the lips, especially near the angles of the mouth, or inside of the cheeks, and upon the tongue, being more numerous upon the tip and edges than upon the centre. They are also seen upon the gums and the sides of the throat. The deposit looks like little bits of curd lying upon the surface of the mucous membrane, and is so firmly adherent as to be removed with difficulty; and when such removal is made the surface below is red, and often bleeds on being touched with a brush or swab. At first the points of deposit are somewhat round and not much larger than a pin's head; but in a day or two they increase in size and become more irregular in shape. By degrees these patches fall off, leaving the membrane below somewhat pitted and redder than in health. They may reappear several times before the parts become healthy. In severe cases the patches are joined together, presenting the appearance of a false membrane, not unlike that seen in scarlet fever or diphthe-

ria. As the deposit loses its vitality, and is on the eve of disappearing, its color changes to a yellowish or cream tint.

Children affected with thrush are often the subjects of diarrhœa, the discharges being sour and of a greenish color. Such children emaciate rapidly, losing their strength and flesh. If the discharges from the bowels are frequent, and acrid in character, they soon produce redness and excoriations around the end of the bowel, which may become the seat of a deposit similar to that seen in the mouth.

If the child be nursing at the breast the disease is very apt to attack the mother's nipple. The suction power of a child in nursing is so strong that it often causes inflammation and excoriations, and if these occur the nipple will be almost certain to become affected with thrush.

In the treatment of the disease, attention must be paid to the child's general health as well as to the local trouble. If the patient has diarrhœa it should be treated by a proper regulation of the diet. If the child is nursing the breast it may be necessary to wean it, at least temporarily, and place it upon some of the substitutes for the mother's milk. The rules given in reference to feeding in the article on "summer complaint" apply with equal force to severe cases of thrush when complicated with diarrhœa.

Absolute cleanliness is of the first importance in the local treatment of thrush. If the nurse is careful to wash the child's mouth and the mother's nipple with warm water, to which a little alcohol has been added, after each application of the child to the breast, the disease is not likely to occur. When children are fed from a bottle the greatest care must be taken to keep the mouth-piece clean, and to see that the child's mouth is properly washed after each meal.

In mild cases the diseased spots should be touched with a camel's-hair brush, or soft swab made of the ravelings of

old linen, dipped into the following mixture: Dissolve an even teaspoonful of tannin in a dessertspoonful of alcohol; then add ten teaspoonfuls of warm water. This should be applied to the spots three or four times a day.

If, in spite of this treatment, the disease does not yield, it may be necessary to use a much stronger wash. Twenty drops of muriatic acid to a tablespoonful of water forms a valuable application for severe cases of thrush. It should be used carefully with a camel's-hair brush, and if the pain produced by it is so severe as to cause the child to cry, the mixture should be weakened by the addition of more water.

The excoriated parts about the end of the bowel and on the buttocks should be bathed with warm water, and then gently touched with the mixture of alcohol, tannin, and water, and when dry they can be dressed with oxide of zinc ointment.

The diapers should be changed as soon as soiled, and the affected parts carefully bathed with warm water.

Borax and honey, or borax and white sugar, or alum and honey, and similar articles, have been used as a local application. I do not consider them as efficacious as the remedies above mentioned. If either borax or alum be used as a local application in this disease, instead of mixing it with honey or white sugar, a much better plan is to triturate it with double the amount of powdered gum arabic. The powder thus formed can be carefully placed in contact with the diseased spots and left to dissolve. In this manner the remedy is kept in contact with the disease much longer than would be the case if honey or sugar were used.

ACUTE CATARRH.

Some children are liable to take cold from slight causes, and are, therefore, objects of great solicitude to their anxious parents.

Children suffering from inflammation of the mucous membrane of the nose, mouth and throat, are said to have a bad cold. *Catarrh* is the proper name for the disorder, while the term *coryza* correctly indicates the disease when it is confined to the nasal passages and is attended with a copious secretion of mucus.

The symptoms of catarrh usually commence a short time after exposure to cold—especially damp cold—or to a draught of cold air. There is a sense of general chilliness and a feeling of cold tremors down the back. The throat and nose are dry and there is frontal headache. These symptoms are followed by a thin, acrid discharge from the nostrils, watery eyes, sore throat, and perhaps hoarseness. Sometimes but one nostril is affected at first, but the disease soon extends to the other. In a short time the discharge from the nose loses its thin character and becomes thicker and more profuse.

Usually the patient has slight fever, the face being flushed and the pulse quickened. The appetite is poor, and the bowels often constipated.

These symptoms usually begin to subside within a few days, the fever disappears, and the appetite gradually returns. The cough, although it may last for some time, becomes easier and the expectoration looser.

If a bad cold be neglected, and if the child be further exposed to the influences that produce it, serious disease of the lungs or the bronchial tubes may result. When the voice and cough are hoarse, an attack of croup is to be feared.

Some children are so susceptible to atmospheric changes that they are liable to take cold from causes that in others would not produce such a result. To break up this tendency to take cold from trivial causes, the mother will be advised to "harden" her child by ceasing to take so much care of it and expose it to the cold air more frequently. To such ad-

vice the wise mother will pay no attention, but will continue to guard with the greatest care the health and welfare of her offspring.

A child should be dressed warm enough to be comfortable, but not so warm as to cause perspiration, for if it be exposed to the cold air while perspiring, or if it be so warmly clad as to induce perspiration while so exposed, it is almost sure to take cold.

Mothers living in the country, on visiting their neighbors, often make the mistake of putting too many wraps around their children to protect them from the cold air. Many cases of sore throat and inflammatory diseases of the lungs have come under my notice where the trouble was brought on by such means.

While it is bad practice to take a young child out visiting during the winter and spring seasons, yet if a visit must be made the child should be clothed just warm enough to keep it from feeling the cold, and not warm enough to cause it to sweat. After it has been thus dressed, a woollen veil should be thrown over its face, and if no current of air is permitted to pass over it there need be but little fear that it will suffer from the exposure.

As a child grows older it must be taught to keep its head covered when in the cold air; otherwise it will be out-doors during the coldest weather with no head covering whatever. A cold in the head, or, perhaps, inflammation of the brain, will often follow such imprudence.

A cold in the head, if promptly and properly attended to, is a trifling affair; but if neglected, and if the child is allowed to still further expose itself, serious disease of the windpipe or lungs may result.

The worst form of croup begins as a simple cold; but the changed voice and the hoarse or brassy cough, together with a feverish condition of the system, reveal the true nature of the case.

Besides taking good care of the child, the *treatment* of a simple cold consists of a mustard foot-bath and a restriction of the diet to the mildest articles, together with a proper dose of the simple syrup of rhubarb to move the child's bowels. If there is much fever a few drops of sweet spirits of nitre can be administered, and if the cough is troublesome, and especially if it or the voice is at all hoarse, the syrup of ipecac must be given in small doses and at frequent intervals.

SNUFFLES.

This is a disease of very young children, and is caused by exposure to cold. In cases of snuffles the nostrils of the infant are closed by crusts of dried mucus and by scabs at the orifice, causing great difficulty and distress in breathing.

A child instinctively breathes through its nostrils and not through its mouth. Hence, if the nostrils be partially closed, the breathing will be difficult. In such cases the child, in order to fill its lungs with air, will start forward at intervals, throw its hands wildly about, and open its mouth to admit a larger stream of air into the lungs. If it would continue to keep its mouth open and breathe through it, the distress would not be so great; but this it will not do, and as soon as it has taken a full inspiration it will close its mouth and again try to get its breath through its nostrils. Even if but one nostril is closed the breathing will be difficult; but if both be impervious to air the child's life may be imperilled by the disease. Although it can relieve itself by opening its mouth and taking a full inspiration, yet it will do this only when driven to it by absolute necessity. The insufficient amount of air taken into the lungs to purify the blood, may, in the end, produce a fatal effect upon the brain. Hence, snuffles should not in every case be looked upon as a trifling affair unattended with danger.

It might be supposed that, in very severe cases, forcibly separating the lips and keeping the mouth open would overcome the trouble; but such is not the fact, for even if the lips should be separated so as to permit the air to enter the mouth, the tongue may be drawn against the back part of the throat in such manner as to prevent the air from entering the windpipe.

Treatment.—The nostrils, from the very beginning of the disease, should be kept moist with some oily substance. A camel's-hair brush can be dipped into a mixture of alcohol and water—one part of the former to five parts of the latter—and applied to the nostrils frequently. The wash should be followed each time by vaseline carefully introduced into the nostril.

If the child's bowels become at all constipated a dose of castor oil or syrup of rhubarb can be given occasionally.

COUGH.

A cough is usually due to irritation affecting some portion of the respiratory tubes, or the nerves that are distributed to them. So great is the sensibility of the respiratory tract that the mere inhalation of cold dry air will, in some cases, produce cough. Cough may be owing to the presence of mucus in the air tubes, or it may be the result of congestion with undue dryness of the bronchial mucous membrane. It may also be produced by irritation situated within the stomach, the ear, and other organs. Elongation of the uvula, or "falling of the palate," often produces a most intractable cough.

In the treatment of cough, reference must be had to the diseased condition that gives rise to it. Thus, if it is of a sympathetic character and arises from irritation of the stomach or other organs, the treatment should consist in the use of such remedies as are calculated to allay such irritation. If

the uvula is elongated to such an extent as to produce a persistent and harassing cough, it may be necessary to remove a small part of its dependent portion. Elongation of the uvula to this extent, however, is not often met with in childhood. No attempt should be made to stop a cough that depends upon congestion and dryness of the mucous membrane of the air tubes, as by so doing the bronchial congestion would be aggravated. In such cases small doses of the syrup of ipecac, frequently given to keep up a slight nauseating effect, will be proper.

As the disease subsides, and the expectoration becomes loose and free, the ipecac can be discontinued, and a mixture consisting of one part of glycerine to three of the syrup of horse-radish can be substituted; the dose being one teaspoonful for a child two years old.

If, at any time, after the fever and other acute symptoms have subsided, the cough becomes so incessant and troublesome as to prevent the child from getting needed rest, a few drops of Godfrey's Cordial can be added to any ordinary cough mixture that does not contain opium, and given often enough to moderate the violence of the cough. But it should be remembered that when there is a secretion of mucus in the air tubes, a cough is nature's means of ridding the lungs of such secretion, and hence in such cases cough medicines should be given with great caution.

The cough that usually accompanies a slight cold seldom requires any specific treatment. The child's bowels must be kept open, and its diet should be carefully attended to. If there is much fever, and if the cough is troublesome enough to prevent sleep, a few drops each of sweet spirits of nitre and syrup of ipecac, to which a half drop of Godfrey's Cordial for each month of the child's age has been added, can be given every three or four hours until relief has been obtained.

If the child is quite feverish, with a hoarse voice and a brassy cough, there is danger of membranous croup. In such cases a physician must be sent for without delay, and until his arrival the mother can administer small doses of the syrup of ipecac every two hours to induce slight nausea. It should be borne in mind that hoarseness in a child must never be neglected. It indicates that there is some disease in the windpipe, and no one can tell when it may develop into an inflammation that will imperil the life of the child.

The child should be protected against further exposure to cold, and, when asleep or awake, should be kept in a room comfortably warm, where the temperature is from 65 to 68 degrees, and where there are no draughts of air.

The front of the child's neck, over the windpipe, can be bathed with a liniment made of one part of spirits of ammonia and two of sweet oil, to which have been added a few drops of oil of cinnamon. If necessary, the bowels should be kept open with the syrup of rhubarb or castor oil.

CHAPTER XII.

Other Diseases of the Air-Passages.

CROUP.

THERE are two forms of this disease: first, *false croup*, or, as it is more properly called, *spasmodic laryngitis*, and second, *true* or *membranous croup*.

The first, which is most common, is comparatively free from danger, while the latter is one of the most dangerous diseases that afflict children.

False croup is usually sudden in its invasion. An otherwise healthy child, after having been exposed to the influence of cold, or to a draught of air, awakes suddenly in the night struggling for breath. It throws itself about in the bed and seems to be in the greatest danger of suffocating. If it tries to cry or speak, its voice will be suppressed or reduced to almost a whisper. When it attempts to cough, the sound is hoarse or brassy, constituting the *croupy cough*, which when once heard is always remembered, and is a source of the greatest alarm to mothers.

Since the disease is mostly of a spasmodic nature, the child will not have a high grade of fever, the skin being often bathed in perspiration.

In many cases the services of a physician cannot be secured promptly; hence the mother must undertake to relieve her child; and if she is provided with the proper means she can usually succeed in giving relief to the little sufferer in a short time.

Treatment.—On finding that her child is suffering from an attack of spasmodic croup, the mother should at once give it a teaspoonful of the syrup of ipecac for the purpose of vomiting it, and if that object is not accomplished in ten minutes, the dose should be repeated. If necessary two or three doses, ten minutes apart, can be safely given, for in moderate quantities this medicine is harmless.

As soon as the ipecac has been administered, water must be heated to give the child a warm bath. After the child has vomited it will breathe much easier until the air tubes are again obstructed, when the dose of ipecac should be repeated to rid the lungs of the mucus.

After the child has had its warm bath, and has been well dried and placed in bed with a blanket or flannel around it, the syrup of ipecac should be continued in small doses every hour during the remainder of the night, the object being not to vomit it, but to keep it slightly nauseated. If at any time the breathing should again become very difficult, enough of the ipecac should be given to produce vomiting as before. By such means the child will soon be restored to health, unless it is again exposed to the influence of cold or draughts of air. During the day after the attack, it will usually seem bright and cheerful, but when the following night approaches, its voice will be changed, and it will likely be subject to other attacks of hard breathing and croupy cough. If it has been properly cared for, it will, in the course of two or three days, be restored to its usual health.

Although the disease is mostly of a spasmodic nature and easily relieved by emetics and the warm bath, yet there are other changes in the windpipe, the membrane lining the larynx being reddened or injected. There is no real inflammation of the part; but as the membrane is already congested and swollen, there is danger that further exposure to the influence of cold may produce inflammation of a dan-

gerous character. To avoid this the child must be kept in a room that is sufficiently warm, but not overheated; it should also be provided with proper clothing to protect it from any change in the atmosphere.

Children who are subject to attacks of croup should wear flannel next to the body. The clothing should be sufficient to keep them comfortably warm without causing them to perspire freely. Nothing is more certain to cause a child to take cold than keeping it so warmly dressed as to produce free perspiration during cold weather.

True or *membranous croup* is a much more fatal disease than the above; but, fortunately, it is of infrequent occurrence, and, unlike false croup, it is rarely developed suddenly. In true croup the child usually seems to suffer from a cold in the head with slight fever for a few days before any alarming symptoms show themselves. It is restless, its face is slightly flushed, and its pulse quicker than in health. To these symptoms are added thirst and loss of appetite. It may also have running at the nose and watery eyes, but nothing positively indicating the presence of croup is observed until the voice becomes changed. The voice in the beginning of true croup gradually becomes muffled or suppressed, and further along in the disease it is entirely lost, the child being able to express its wants in whispers only. About this time the peculiar croupy cough is heard, being probably the first symptom that alarms the mother. Soon the breathing, which before had been hurried, becomes extremely difficult. The child throws its head back, dilates its nostrils, and uses every muscle that belongs to the respiratory system in its efforts to fill the lungs with air.

A careful inspection of the throat shows that in many cases the posterior parts of the palate and the tonsils are flecked with patches of white exudation. The disease is an inflammation of the windpipe, attended with an exudation

of a false membrane, which adheres closely to the parts, and gradually, if not removed, fills up the larynx until air can no longer pass through it, causing speedy death.

Hoarseness of the voice often precedes the difficult breathing for several days, and this has given rise to the axiom that hoarseness in a child is always a cause for alarm. Certain it is that a child with a hoarse voice should always receive careful attention, and be kept from exposure to cold or draughts of cold air. Such a child should be kept in a comfortable room, of even temperature, until its hoarseness has disappeared. It would also be well to apply warm liniments over its windpipe, and keep it slightly nauseated, by giving small doses of syrup of ipecac.

Sometimes the false membrane exists in the throat and upper part of the windpipe only, and by closing the tube at that point produces death. In other cases it is formed not only along the whole length of the windpipe, but also in the bronchial tubes. When the obstruction is confined to the upper portion of the windpipe, the operation of tracheotomy, made by opening the tube below the point of obstruction, may save the child's life; but if the disease extends into the lungs, involving the bronchial tubes, no good can be accomplished by the operation.

This form of croup being one of the most fatal diseases with which children are affected, medical assistance should be summoned without delay; but if no physician can be had in the beginning of a case, it is important that the mother should know how to proceed in his absence.

As before stated, if a child shows signs of cold in the head, with feverishness and a hoarse voice, the mother should at once realize the fact that it may become dangerously sick unless proper means are used to relieve it.

Treatment.—The first thing to be done is to place it in a warm, well-ventilated room. True croup usually attacks chil-

dren in cold weather; hence a child with the initial symptoms, after being placed in a suitable room, should not be allowed to leave it. Only the blandest food ought to be allowed, and the bowels should be kept open with castor oil, or rhubarb. The front part of the neck may be bathed with a warm liniment, which should be rubbed in with the hand, after which a piece of thin flannel can be pinned around the neck. Internally, the syrup of ipecac should be given in small doses every two hours when the child is awake, the object being not to vomit it, but merely to produce slight nausea.

If, in spite of these measures, the symptoms begin to grow worse, and no physician can be had, the mother should place her child in a warm bed, and apply a compress, consisting of several thicknesses of flannel, dipped in water as hot as can possibly be borne, to the throat and upper part of the chest. This compress must be changed often, as the heat and moisture must be kept up for a long time without intermission. The object of treatment now is to loosen the false membrane, and cause its expulsion if possible, while the strength of the child should also be cared for.

At any time after the breathing has become difficult, if there are signs of loosening of the membrane—which is indicated by mucous rattles in breathing and a loose cough—an emetic should be given. For this purpose nothing is better than powdered alum, in teaspoonful doses, mixed with honey or molasses. This acts quickly and without much nausea, and does not depress the patient's strength to any great degree. If the first dose does not produce vomiting, another may be given in ten minutes.

Very often emetics seem to have but little effect in these cases, and it becomes almost impossible to vomit the patient with any drug.

If the child should be so fortunate as to expel the false membrane by vomiting (a result not often obtained)

the greatest care must be taken in the after management of the case, for the reason that there is danger of another membrane forming. The hot applications to the throat and chest and small doses of the syrup of ipecac should be continued. The air of the room should be quite warm and kept at an even temperature.

Cold air should be excluded from the patient's room by keeping all outside doors closed, but when this is impossible the child can be protected by hanging a bedquilt by the side of the bed.

But few cases of true croup recover; still the mother can do no better than follow the foregoing directions. When the ordinary remedies have been faithfully tried without benefit, and the case seems hopeless, the question of trying the operation of tracheotomy may be considered. This is a matter that should be left entirely with the surgeon, who will recommend it if he believes that the operation offers any chance of saving life; if he thinks otherwise he will advise against it.

BRONCHITIS, OR CATARRHAL FEVER.

This is one of the most common diseases to which children are subject. It is most frequent during the spring and winter months, being especially prevalent during those winters noted for frequent rainfalls and melting snows.

This disease was known to the old authors as *catarrhal fever*, and in some localities it is still called by that name.

Bronchitis usually begins as a common cold affecting the chest; but by degrees the symptoms, instead of subsiding, become more aggravated; the fever is more marked; the cough, which is frequent, is tight and accompanied with pain, causing the child to cry after each coughing spell. The respiration becomes wheezy and irregular. The fever is higher and the cough more troublesome towards evening

and during the early part of the night. On awaking, the breathing is much oppressed, owing to the mucous secretion filling the larger air tubes. A fit of coughing, ending in vomiting, will usually clear the air tubes, when the child will breathe with comparative ease until the accumulation of mucus again obstructs the air passages. As the disease progresses the skin becomes moist, often being covered with profuse perspiration. If the ear be applied to the chest, a rattling sound will be heard, caused by air passing through the mucus contained in the bronchial tubes. As long as the disease is confined to the larger air tubes it is not very fatal, and most cases recover without difficulty; but if the inflammation extends to the smaller tubes—thus causing what is known as capillary bronchitis—the life of the child is placed in the most imminent danger.

Capillary bronchitis may develop suddenly, but in most cases it occurs during the progress of ordinary bronchitis, or else follows an attack of one of the eruptive fevers, as measles. Soon after the attack begins, the breathing becomes difficult and hurried; the cough frequent, short and hacking; the face anxious, and the eyes heavy. The child is very restless and changes its position frequently as though it could not long remain in one place. Though usually thirsty, it refuses, on account of difficult breathing, to swallow much fluid, and contents itself with merely wetting its lips. Vomiting is not often present, and, indeed, in this disease, as in real croup, it is often hard to produce it even with full doses of emetics.

As the disease progresses the child becomes more and more restless, throwing itself wildly about the bed, and there is an increase of the hurried breathing, until the acme of the disease is reached.

Before death takes place the breathing becomes seemingly easier and less frequent, though irregular. The face assumes

a livid appearance; the cough is smothered and not so persistent; the pulse is frequent and feeble; the child is drowsy, and arouses itself only when compelled to cough or struggle for breath. In this condition death soon puts an end to its suffering.

In some cases during the progress of an attack of bronchitis, the substance of the lung becomes involved, thus greatly endangering the child's life, and adding pneumonia to the existing trouble, constituting what is known as *broncho-pneumonia.* When pneumonia occurs during the progress of bronchitis, all the symptoms increase in severity. The patient's general distress is more marked; the breathing is very difficult and painful; the face is livid, caused by the air failing to reach the air-cells; the respiration is irregular and hurried. This disease is very dangerous, and no one but a skilled physician should undertake its management.

The treatment of bronchitis and pneumonia in their various forms differs but little, and is conducted on the same general principles.

The mother of a child suffering from bronchitis should at once see that the patient is not further exposed to the influence of cold, but is kept in a moderately warm room. No medicine ought to be given to moderate or stop the cough; but small doses of the syrup of ipecac can be administered every hour or two, the object being to produce slight nausea without vomiting. The chest should be well rubbed with a liniment made of one part of spirits of hartshorn and two parts of sweet oil, to which a few drops of the oil of cinnamon have been added. This can be warmed and applied often enough to keep up a very slight redness of the skin.

If the attack is sudden, or at all severe, a mustard plaster, made by mixing mustard and flour with molasses, can be placed over the whole front of the chest and kept on as

long as it does not give pain. If these measures do not give relief, and the breathing continues difficult and painful, it will be necessary to apply flannel cloths, wrung out of hot water, to the front and sides of the chest; or, what is better, to envelop the whole of the chest in a linseed or wheat-bran jacket, as described in the article on pneumonia. The ipecac should be continued, and if the breathing becomes very difficult from accumulation of mucus in the air-tubes, the medicine should occasionally be given in doses sufficiently large to produce vomiting. Attention should be paid to the condition of the bowels, and, while active purging must be avoided, a gentle movement should be secured once or twice a day. This can be done by the administration of proper doses of castor oil or syrup of rhubarb.

For a considerable time after the acute symptoms have subsided, the child may continue to be troubled with coughing and wheezing. In such cases slight causes will produce a recurrence of the bronchitis; hence, the utmost care must be taken to prevent the child from taking cold. If a return of the disease is threatened, small doses of ipecac must be given three times a day and once or twice during the night; and if there is any appearance of a return of the fever, the ipecac should be given in doses sufficient to produce slight nausea.

The directions given in regard to diet in the article on pneumonia apply with equal force to cases of bronchitis, and need not be repeated here.

PNEUMONIA, OR LUNG FEVER.

This disease is divided into *three stages*. In the *first stage* the substance of the lung is congested with blood, but the air-cells are to a great extent free.

In the *second stage* the lung becomes solidified from inflammation of the tissues and the filling up of the air-cells by matter that has exuded from the blood-vessels.

In the *third stage* the lung tissue becomes disorganized, breaking down into matter and proving fatal; or the inflammation subsides, the effused matters are absorbed or expectorated, and the patient recovers.

In children, pneumonia usually appears during the course of bronchitis, or it may follow an attack of one of the eruptive diseases, as measles. Occasionally it occurs in children without having been preceded by the symptoms of bronchitis. In such cases it usually begins with slight feverishness in the evening, together with fretfulness and headache. During the night the sleep is unsound, the child talking in its sleep and often waking in alarm. Soon after the appearance of the fever, a short, hacking cough ensues, which at first may not be distressing, but soon becomes more frequent and painful. The tongue is red, sometimes dry, and coated in the middle with a white fur. The child soon ceases to breathe through the nose, and is forced to take its breath through the mouth. If put to the breast it will be unable to suck as usual, but will take the milk by starts—sucking with greediness for a moment and then with a cry, letting the nipple drop out of its mouth.

In children four or five years old, pneumonia may come on suddenly. A child of this age, that was apparently well at bed-time, wakes in the night in great alarm and distress. It has a flushed face, burning skin, short, dry cough, and complains of pain in the chest. Vomiting may, or may not, be present. If these symptoms occur in a child that has lately been exposed to cold while the body was warm and perspiring, they indicate the existence of pneumonia.

As the disease progresses to the second stage, the child becomes drowsy and lies quietly in bed, crying if disturbed. The breathing is more rapid, and the sides of the nose are distended, or move outwards each time the child gets its breath. Owing to the difficult breathing the muscles of the

abdomen are called into play to aid in the act of respiration. The cough is more frequent and painful. The body remains hot, while the feet and hands may be cool. If the lung tissue be greatly affected, the lips and skin around the mouth will be livid, while the face is pale.

Pneumonia involving the greater part of the lungs, or commencing during a severe attack of bronchitis, or following an attack of measles or other disease that has greatly debilitated the patient, may end in death during the second stage of the disease. But if the child is reasonably strong at the time of the attack, and if the amount of lung tissue involved is not excessive, and if the disease has not been arrested by treatment, it will pass into the third stage.

In this stage the respiration becomes more labored and quite irregular. The child takes a few short and hurried inspirations, which are followed by others that are deeper and longer. The cough is less frequent and looser, and is caused by the presence of mucous secretions in the larger air-tubes. The child, if it tries to speak out at all, does so in a hoarse whisper, and evidently with pain. The face looks sunken, the extremities are cold, and a clammy sweat breaks out on the forehead. The pulse is so frequent and small as to be difficult to count. The difficulty of breathing increases, the face and nails become more livid, and the child's drowsiness increases until death takes place.

Occasionally convulsions occur before death, succeeded by a sleep from which the child cannot be aroused. Pneumonia attended with convulsions at this stage is always fatal.

But pneumonia in childhood does not always follow the above course. Recovery may take place during or at the end of either the first or second stage; and even in the third stage severe cases frequently recover—convalescence being protracted—the child requiring a long time to regain its strength. It may happen, however, that the patient,

after passing into the third stage, with all the symptoms of impending death, shows signs of improvement calculated to deceive the mother. Its appearance may be brighter, and it may even express a desire for food. The cough, which had nearly ceased, returns, and is loose in character. The breathing, though quick and short, is not so labored. The skin is hot and dry. The tongue is red and dry, and, in some cases, whitish ulcers appear on its edges. Diarrhœa is usually present, and the child wastes away and dies in a week or two, completely emaciated.

Treatment.—This disease being attended by a high degree of inflammation, and especially dangerous to life in early childhood, no mother should take upon herself the responsibility of treating a case, but should secure the services of a physician as soon as possible. While medical aid is being obtained, the mother can render valuable assistance by proceeding according to the following directions:

Moist heat gives great relief in the first stages of pneumonia. Flannel cloths, wrung out of hot water, and applied over the whole of the front and sides of the chest, will be beneficial. The cloths should be folded two or three times, so as to hold considerable heat and moisture, and should be applied as hot as can be borne by the child, a piece of dry flannel being laid over the wet cloth. These applications should be renewed every fifteen or twenty minutes to get the full benefit of the heat. While applying moist heat to the chest a blanket should be placed under the child, and if the weather be cold, another blanket should be spread over it. The greatest care must be observed to prevent the child from taking cold during the application of wet cloths and poultices. No current of air should be permitted to pass over or near the patient. During the winter season the air of the patient's room must be of a moderate temperature—neither too hot nor too cold—and no door should be opened

that permits the outside air to rush into it. Ventilation should be secured by allowing air to pass from other rooms into the sick-chamber.

In severe cases, when the proper material is at hand, it will be best to use the jacket poultice. The jacket must be made of flannel, and should go around the whole of the chest and be fastened in front. A piece may be cut out where the arm-pits rest, so as to let the jacket come well up towards the neck in front. Strips of muslin can be tacked behind and passed over each shoulder and fastened in front to keep the jacket in place. The poultice is best made of linseed meal, spread nearly half an inch thick, and applied moist and as hot as the child can bear. This can be changed occasionally, so as to keep up a continuous supply of heat to the skin.

No medicine should be given by the mother to stop or moderate the cough; but small doses of the syrup of ipecac, frequently repeated, will be useful from the very beginning.

If the bowels are at all constipated and the fever is high, a dose of castor oil or syrup of rhubarb may be given with good effect. A few drops of the sweet spirits of nitre in a teaspoonful of water may be administered every two hours when the child is awake, to moderate the severity of the fever and to act upon the kidneys.

Food, during the early stages of pneumonia, should be given sparingly. If the child is at the breast, it will be well to offer it a spoonful of cold water occasionally to quench its thirst, so that it will not crave so much milk. If the breathing is so hurried as to greatly interfere with sucking, causing the child to fret and cry each time it nurses, the mother should draw her milk and give it to the infant in a teaspoon. As the disease progresses and the child becomes emaciated, efforts should be made to keep up its strength by feeding it more liberally. Beef tea and veal broth, or,

if diarrhœa be present, rice, arrow-root, tapioca, or cream crackers grated into boiling water, to which a little hot fresh milk has been added, will answer the purpose. Condensed milk, or some of the patent foods for infants, prepared according to the formulæ that accompanies each package, will often agree with the child and afford it substantial nourishment.

The advice here given will enable the mother to give some relief to her child without risk of doing harm, and aid her in assisting the physician in his efforts to restore it to health.

PLEURISY.

This disease consists of an inflammation of the pleura, the serous membrane that lines the inside of the chest and is reflected over the outside of the lungs.

The arrangement of the pleura is such that it presents two surfaces lying in apposition with each other.

In health these surfaces are smooth and moist, gliding past each other without friction or pain. When inflamed the surfaces of the pleura become injected with blood and roughened, causing pain during respiration.

As the disease progresses, false membranes, varying in size and thickness, are formed. In some cases these membranes become organized, causing adhesions between the two surfaces of the pleura. In other cases, in addition to the formation of a false membrane, the inflammation is followed by an exudation of a fluid which may be either of a serous (watery) or purulent nature. In serous effusion the fluid is straw-colored, and may exist in large quantities, filling up the cavity of the chest, and compressing the lung into a solid mass. In the purulent form of pleural effusion, the fluid is thick ("matter" or "pus"), and of a yellowish or greenish yellow color.

The term *empyema* is applied to the collection of pus in the chest cavity. In nearly all cases the effusion is at first

of a serous or watery nature; but after remaining in the cavity of the chest for a week or two, in unhealthy persons, it becomes purulent. As before stated, the lung may be so greatly compressed as to be rendered useless for breathing purposes. In such cases respiration is maintained solely by the sound lung. If the effusion be in the left side of the chest, and excessive in quantity, the result will not only be compression of the left lung, but the heart will be displaced, being pushed over to the right side.

If the effusion be serous or watery, and not of long standing, absorption may take place; the patient being restored to health without deformity or other permanent results of the disease.

Chronic pleurisy is, in most cases, an outcome of the acute disease. It is especially prone to occur in those persons who are predisposed to consumption. In chronic pleurisy the fever is of low grade, and resembles the hectic fever of consumption. The patient is weak and emaciated, and his breathing is greatly interfered with. Although he may be able to walk about his room, and even out-doors, yet he is incapable of taking much exercise, as the least exertion is followed by marked fatigue and breathlessness. Chronic pleurisy may last from a few months to as many years, recovery without operative interference being rare.

If the effusion in the chest becomes purulent, or if it is serous, and in sufficient quantity to seriously interfere with breathing, it should be evacuated by tapping.

If surgical interference is not attempted, and the patient lives long enough, the fluid often makes its way out of the chest by ulcerating through the walls, or by opening into a bronchial tube, or by burrowing through the diaphragm and emptying into the stomach or bowels.

The evacuation of a large amount of fluid that has been long contained in the cavity of the chest is usually followed

by a flattening or sinking in of the chest wall on the affected side.

Pleurisy is often caused by exposure to cold, especially when the body is in a perspiring condition. It may also be associated with pneumonia, bronchitis and consumption. In Bright's disease of the kidneys, pleurisy may become a serious complication.

The symptoms of pleurisy vary with the stage and severity of the disease. In mild cases they may be limited almost entirely to the peculiar pain that accompanies the first stage of the disease. This pain is sharp, cutting, and is greatly increased by breathing, coughing, and by abrupt movements of the body. It is usually felt a little below and behind the nipple, and is often limited to a small space. The pain varies in its duration, sometimes ceasing in two or three days, while in other cases it is felt at intervals throughout the whole disease.

Except in very mild cases, pleurisy usually begins with a chill, followed by fever and difficult breathing, which may last two or three days.

Pleurisy followed by effusion is a more serious disease than dry pleurisy. Usually it begins with a chill, which is followed by considerable fever and severe pain in the side of the chest, the pain being greatly increased by breathing or coughing. The fever increases in severity as evening approaches and continues for a week or so, when effusion into the chest begins. Occasionally the pain in the side and effusion occur before any chill or fever is noticed.

When the effusion becomes purulent, or when the patient is disposed to consumption, the daily occurrence of chills may be looked for. These chills come on at irregular intervals and are followed by an increase of fever.

Cough is usually present in pleurisy from the beginning. It is suppressed or cut short by the patient on account of

the pain in the side being greatly increased by any attempt at coughing.

Difficult breathing is a distressing symptom in pleurisy. It is caused both by the severe pain rendering respiration difficult and by pressure of the effusion upon the lung, making it impossible to fill it with air.

Before effusion takes place, the patient lies on the sound side, so as to take off as much pressure as possible from the affected lung. After the effusion has compressed the diseased lung, rendering it to a great degree impervious to air, the patient is compelled to lie on the affected side in order to give free play to the sound lung. In the worst cases rest can be had in an erect or semi-erect position only. The expectoration in pleurisy, unless bronchitis co-exists (which is not common) is scant, and consists of a frothy mucus.

Pleurodynia is sometimes mistaken for pleurisy. It is of rheumatic or neuralgic origin, and is unaccompanied by fever or other evidence of inflammation. The pain is confined to a particular spot, which is excessively tender when pressed upon. The affection is usually of a trifling character, and most cases yield readily to hot applications, with absolute rest of the body.

Severe and repeated attacks of pleurisy have a marked tendency to the production of consumption in those who are prone to that disease, and in fatal cases of chronic pleurisy the symptoms are nearly identical with those observed in the last stages of phthisis.

Pleurisy may be mistaken for pneumonia; but in the latter disease the initial chill is usually much severer than in the former, and is followed by a higher grade of fever. The pain in pleurisy is sharp, cutting, and limited to a small area, while in pneumonia it is of a dull, heavy character, and is usually diffused throughout a large portion of the lung.

The expectoration in pleurisy consists of small quantities of white, frothy mucus, while in pneumonia, after the disease has existed a short time, it is somewhat profuse, and of a "brick-dust" color, owing to the admixture of blood with the mucus.

Treatment.—The treatment of the mild form of pleurisy is quite simple. The patient should remain quietly in bed, and if the bowels are at all constipated a mild purgative, such as the syrup of rhubarb, should be administered without delay. If fever is present, small doses of sweet spirits of nitre, plentifully diluted with water, can be given with benefit. If the pain is very severe, and is not relieved by hot applications to the chest, a moderate dose of Dover's powder, to be repeated, if necessary, in four or five hours, can be administered.

In the beginning of the attack recourse should be had to flannel cloths wrung out of hot water and applied to the painful spot. If these applications fail to relieve the pain, after a few hours' trial, they can be discontinued, and a large mustard plaster, made as heretofore directed, may be used in their place. The mustard should be kept on the chest as long as it can be borne without blistering.

The results of severe attacks of pleurisy are often quite serious, and hence such cases should be treated only by a skillful physician.

In addition to the above-described treatment, which may be followed in all cases of pleurisy in the beginning of the attack, more powerful remedies will often be required when the disease does not yield readily. Thus, if the attack be severe, and if the patient be plethoric or full-blooded, leeches to the affected side will be beneficial. After leeching, the side of the chest should be enveloped in a warm, moist poultice made of linseed meal or bran. Calomel, in small doses, may be required, while Dover's powder in moderate quanti-

ties should be continued for the purpose of relieving pain and procuring rest and sleep.

If the effusion is purulent, or if it consists of serum in sufficient quantity to seriously interfere with breathing, recourse must be had to tapping the chest and withdrawal of the fluid. This operation is attended with some danger, and should be done by one skilled in its performance.

CHAPTER XIII.

Diseases of the Stomach and Bowels.

VOMITING.

AMONG the disorders that afflict young children, vomiting is one of the most frequent. Depending, as it usually does, upon injudicious nursing or feeding, either in the quantity or quality of the nourishment, it ceases in most cases as soon as the cause that produced it has been removed.

Treatment.—If a child that has been over-fed, or has been given indigestible food, is affected with vomiting that does not cease after careful attention has been paid to its feeding, but, on the contrary, becomes persistent, it may be necessary to resort to other measures than the mere regulation of its diet.

If food is thrown up soon after being swallowed, it will be unchanged in character; but if it has remained for some time in the stomach it will be quite sour when ejected. If the vomiting of sour food continues for any length of time, it will be well to give occasionally a teaspoonful of weak soda water (made by dissolving a teaspoonful of baking soda in a glass of water) to neutralize the acid condition of the stomach. If, after all the food has been thrown up, the child continues to vomit a dark or yellowish bitter substance, known as bile, it will be best to let it have a draught of warm water to assist the stomach in getting rid of such matter and

to lessen the straining that accompanies the effort. If the vomiting continues, measures must be taken to check it and allay the irritation of the stomach upon which it depends. For this purpose very small pieces of ice may be given to the child occasionally, and a weak mustard plaster, made by mixing one part of mustard and three or four parts of flour with a sufficient quantity of molasses, should be applied over the front of the chest and the abdomen. A small mustard plaster will do little or no good, while a large one, properly made, will accomplish the desired result, and will give but little pain to the child.

With the exception of an occasional teaspoonful of ice water to allay thirst, and the cold soda water (herein recommended in cases of sour vomiting only), no drink or food of any kind should be given until the vomiting has ceased.

The foregoing remarks are intended to apply to cases of vomiting unattended with other symptoms of disease.

If the vomiting continues in spite of the above treatment, and if it is accompanied with other symptoms of disease, as feverishness, emaciation, and general indisposition to exercise—in short, if the child seems to be sick otherwise than at the stomach—the services of a physician must be secured, as there may be danger of impending or actual disease of a serious nature. Persistent vomiting may be the first noticeable symptom of tubercular inflammation of the brain.

CONSTIPATION.

Constipation is sometimes very annoying in young children. While a healthy child may have but one operation a day, yet in most cases the bowels should be moved two or three times in that period; and if they become obstinately constipated, as shown by few operations and the hard char-

acter of the stool, the trouble must be corrected by mild measures.

Although a change from the mother's milk to artificial feeding is usually followed by diarrhœa to some extent, yet occasionally the opposite effect is noticed. This is especially apt to be the case in partial weaning—that is, when the mother does not give sufficient milk for her child and is forced to combine artificial feeding with nursing.

Sometimes the trouble can be overcome by a judicious management of the diet. If the mother has been careful to thoroughly scald the cow's milk by adding boiling water to it before giving it to her child, and constipation has followed its use, she should afterwards use warm instead of boiling water. This will likely correct the difficulty, for milk that has been boiled tends to restrain the bowels, while that which has not been heated has an opposite effect. Should the change be made and the bowels become too loose, the boiling water must again be used to dilute the milk.

If the constipation continues in spite of the change of diet, it will be proper to move the bowels by artificial means. This can be done by introducing a small piece of castile soap into the bowel, as before directed, or by using injections of warm water, to which a little melted lard or castor oil may be added. If the soap or the injections are resorted to, it will be best to gradually lengthen the intervals between using them, with a view of aiding nature to overcome the constipation in a natural manner.

Thus, if at first an injection is used every twenty-four hours, it may be well, after a few days, to use it once in thirty hours, and thus gradually increase the intervals until the bowels are moved without assistance.

In very obstinate cases injections alone will not be sufficient. They unload the lower bowels only, and in long-con-

tinued cases it is essential that the whole intestinal tract be emptied. Therefore, once or twice a week, in addition to the injections, the child should have a dose of simple syrup of rhubarb, made according to the directions given in the article on "Medicines."

SIMPLE DIARRHŒA.

Diarrhœa in children is not uncommon, and may arise from a variety of causes. In some cases it is a very trifling disorder, while in others it may be the forerunner of some grave disease.

Treatment.—Simple cases, such as are caused by overfeeding or nursing, when not attended by other symptoms of disease, can usually be relieved by paying attention to the diet and withdrawing a portion of the food at each meal.

Some cases of diarrhœa are produced by the swallowing of food that is not digestible by the very young. Some article placed into its hands by the nurse may have been swallowed, and the first intimation the mother has of anything wrong is restlessness and fretfulness on the part of the child. In a little while it has a large, loose operation of the bowels, passing part of the food that has not been digested. The indigestible food should be gotten rid of as soon as possible, and a small dose of castor oil should be given with this view. After it has acted, and the offending material has passed from the bowels, it will only be necessary to see that the child is kept quiet, and that its usual diet is restricted—not more than a third or one-half being allowed it for twenty-four hours.

If, after the castor oil has acted, there is a continuance of the diarrhœa, a few drops of Godfrey's Cordial, combined with a teaspoonful of aromatic syrup of rhubarb, may be given occasionally until the disease has been arrested.

PERITONITIS

(*Erroneously called inflammation of the bowels*).

Peritonitis consists of an inflammation of the *peritoneum*—the serous membrane that lines the cavity of the abdomen, and, being reflected over the intestines, constitutes their external covering. The inflammation may be limited to a small portion, or it may extend over the whole of the membrane. In the former case it is called *local*, and in the latter *general* peritonitis. The disease may exist as a *primary* affection, or it may arise during the course of some other affection, when it is called *secondary* peritonitis. It may be either *acute* or *chronic*. Chronic peritonitis may succeed the acute form of the disease, or it may be *tubercular* in character. In the latter form it is usually associated with tubercular disease of the lungs or the bowels, or both.

The term inflammation of the bowels is often incorrectly applied to this disease by non-professional persons.

Acute peritonitis may be caused by sudden and severe exposure to cold—especially when the abdomen is not sufficiently protected by clothing. Blows and other injuries inflicted upon the abdomen may produce the disease. Oftener, however, it depends upon perforation of the intestines. In rare instances, worms have forced their way through the intestines into the peritoneal cavity, thus giving rise to peritonitis.

Symptoms.—Peritonitis, due to exposure to cold, begins with a severe chill, followed by high fever and great tenderness and pain in the abdomen. The abdominal walls soon become distended and excessively tender, the patient being unable to bear the slightest pressure. Even the bed-clothes, by their weight, give him pain. Owing to the pain produced by the act, he is unable to extend his limbs, and lies on his

back with his legs drawn up towards his body. This position of the body is significant of peritonitis.

When, during the course of some other disease—such as typhoid fever—perforation of the bowel occurs, the accident is accompanied with an intense pain in the abdomen, followed, usually, by a severe chill or rigor.

Vomiting is generally persistent during the course of an attack of peritonitis, and in the advanced stages the matters thrown up are of a bluish green color. When this symptom is present it usually indicates a fatal termination, as but few cases recover under such circumstances.

The breathing in peritonitis is short, quick and superficial, owing to the fact that each inspiration forces the diaphragm down on the inflamed structures, thus causing an increase of the pain.

The bowels are, as a rule, constipated, especially in the beginning of the disease; when diarrhœa is present it usually indicates that the peritonitis has a tubercular origin.

Hiccough is a frequent and distressing symptom of the disease in its advanced stages.

The pulse in peritonitis is small and quick, and towards the close of the disease it ceases at the wrist while the heart still acts.

The temperature is not as high as in most other forms of inflammatory disease, and before death it usually sinks below the normal standard.

As death approaches, the mind often remains unclouded, the patient being conscious of all that is going on around him. He is bathed in a cold sweat, while his skin, tongue and mouth are cold to the touch. The eyes are surrounded by dark, livid circles; the countenance is anxious and the voice is husky. A peculiar odor, like that from a dead body, is exhaled from the patient.

Cases of mild or circumscribed peritonitis may end in recovery; but when the disease involves all, or nearly all, of the peritoneum, death is nearly always the result.

The treatment of peritonitis should be undertaken only by a competent physician. Even under the most favorable circumstances but few recover from an attack of the disease, and whatever chance there may be to arrest its progress is confined to its initial stage. Before the arrival of the medical attendant the mother should place her child in bed and apply cloths, wrung from hot water, to the whole of its abdomen. All kinds of food should be withheld from the patient, but if thirsty he can have cold water in small quantities at a time.

The medical treatment of severe cases of peritonitis varies, to some extent, with the cause that produces the disease, and need not be alluded to in this article.

WORMS.

Of the different kinds of worms to which children are subject, the long round-worm and the short thread-worm are the most frequent, Tape-worms are so seldom found in very young persons that it is deemed unnecessary to treat of them in this book.

The symptoms produced by worms are various and often misleading, being such as are observed in irritation of the stomach and bowels from any cause.

When a child is troubled with worms to any great extent it will have foul breath, a changeable appetite, occasional sickness at the stomach—perhaps vomiting—a swelled abdomen, and during sleep it will be restless, and often awake in alarm.

Worms may, by irritating the stomach and bowels, cause great disturbance of the nervous system, ending, sometimes, in convulsions.

If suffering from thread-worms, which are seated in the lower bowel near its outlet, the child will be tormented with itching of the parts.

It often happens that a child having quite a number of round-worms in its bowels shows no signs of their presence, but continues in the enjoyment of good health, and it is only when one is vomited or passed by stool that their presence is suspected.

When from any cause the child becomes sick, the worms begin to wander from one part of the bowel to another, or perhaps get into the stomach, when, by irritating that organ, they produce vomiting.

Such articles as unripe fruits, and meats not sufficiently cooked, may contain the germs from which worms are liberated in the stomach. The drinking of impure water, especially that obtained from marshy or low-lying districts, may be the means of conveying the eggs to the system. According to some authors, the eggs are frequently carried under the finger-nails of children, and thence they are easily transferred to the mouth.

Children that are subject to worms should drink but little milk, and syrups and other sweets should be strictly forbidden them. When such articles are freely used the worms seem to multiply with great rapidity.

In the treatment of children affected with worms, it is best not to use any of the patent vermifuges. Most of them are quite irritating to the mucous membrane of the stomach and bowels, and in excessive doses are liable to produce severe nervous symptoms. Besides, the long-continued use of such articles, by their injurious effect upon the stomach, may produce troublesome indigestion. Lozenges containing santonine may not be liable to these objections, but they are so unreliable and uncertain in their action as to be unworthy of a trial.

The oil of wormseed is, perhaps, the safest and most reliable remedy we have for the expulsion of the round-worm. It should be given in combination with glycerine and syrup of rhubarb. A child two years old may take three drops of the oil mixed with one-third of a teaspoonful of glycerine and one teaspoonful of the syrup of rhubarb or castor oil. If this medicine does not move the bowels freely, a dose of castor oil, to which five or six drops of turpentine have been added, should be given the next day to clear out the alimentary canal.

The bad taste of the oil of wormseed sometimes renders it impossible to get a child to take or retain it. In such cases recourse should be had to santonine in doses of one to two grains for a child two years old. The santonine should be rubbed up with a small amount of white sugar and placed in the child's mouth, after which a little water may be given. The next day a dose of syrup of rhubarb or castor oil with a few drops of turpentine should be administered to act upon the bowels.

The pink-root and senna mixture is an old remedy, and sometimes proves quite efficient. Take one-half ounce each of pink-root and senna, pour over them a pint of boiling water, and let it stand a few hours, after which it is ready for use. A tablespoonful can be given morning and night to a child two years old. After giving it for two or three days it should be suspended for awhile.

The short thread-worms are situated in the lower bowel, and are quite difficult to get rid of. The ordinary remedies used for expelling the long round-worms have but little effect on the seat-worm. To remove them effectually it will be necessary, in addition to giving vermifuge as above directed, to resort to the use of injections. A pint of boiling water can be poured over a teaspoonful of powdered aloes, and after standing a few hours, one-fourth of it may be used as

an injection, to be repeated each night until the whole of it has been used. If this does not serve the intended purpose, a mixture of equal parts of lime water and milk, or mucilage of slippery elm, can be injected into the bowel.

To allay the itching that is caused by seat-worms, a little calomel ointment (one-fourth of an even teaspoonful of calomel to a large tablespoonful of lard) should be rubbed on the parts and some of it inserted with the finger into the bowel.

PROLAPSE OF THE BOWEL.

Protrusion of the bowel from the fundament is caused by the straining that sometimes accompanies protracted diarrhœa. This accident is very liable to happen in delicate children, whose muscles are weak and lax. The protrusion usually occurs while the child is straining at stool, and on being replaced it gives no further trouble until the next evacuation, when it again descends. In other cases the bowel does not keep its position after being returned, and falls of its own weight. Sometimes only a small part of the intestine protrudes from the orifice, while at other times the prolapsed portion may be three or four inches in length.

While simple cases get well in a short time after the diarrhœa ceases, others, of greater severity, may last for a long period even when properly treated.

When the bowel descends independent of the child's straining at stool, it will be necessary, after returning it, to hold it in place by a compress, which should be supported by a bandage. Fold a piece of well-worn muslin into several layers half the size of the palm of the hand, grease it with fresh lard and place it against the fundament. Then fasten a strip of muslin, an inch and a half wide, around the body just above the hip bones. Fasten another strip, of the same size, to the back of the first, letting it pass between

the limbs against the compress, and bring it up and secure it to the front of the strip that goes around the body.

In mild cases the nurse can often prevent the bowel from descending by making pressure with the fingers, placed against the fundament, while the child is having an evacuation.

The bowel, while it is down, should be bathed with a solution of tannin (a large teaspoonful of tannin to a half pint of water), after which it can be returned by pressing against it with the fingers, or a soft rag well greased with fresh lard. After it has been replaced, a suppository made of one part of tannin to four of mutton tallow, and rolled into a ball the size of a buckshot, should be introduced a little way into the bowel.

If judiciously managed, cases of prolapse of the bowel in children end in recovery.

CHAPTER XIV.

Diseases of the Stomach and Bowels

(*Continued*).

SUMMER COMPLAINT.

UNDER the common name of *summer complaint* we shall treat, first, of *cholera infantum;* second, of *ileo-colitis;* and, third, of *summer diarrhœa.* Some writers have considered the above as distinctive diseases, and have devoted separate articles to them. That this division is not necessary, however, is shown by the fact that not infrequently we meet with children that are at first attacked with symptoms of true cholera infantum, and under treatment the acute and graver symptoms subside, only to be followed in a few days by ileo-colitis, which, after awhile, is merged into a common infantile diarrhœa that lasts, in some cases, until the beginning of cold weather.

Summer complaint is most prevalent during the second summer of infantile life, although children may suffer from it at a much earlier period. The worst cases usually occur at the time when the child is cutting its teeth. It prevails mostly during the hot weather of July and August, and many cases become worse when cool nights succeed the hot days of August.

Cholera infantum usually comes on suddenly, although it is occasionally preceded by looseness of the bowels, which,

being neglected, terminates in the former disease. The attack, in most cases, commences with a profuse diarrhœa, which is soon followed by persistent vomiting.

The vomiting and diarrhœa may be so severe as to cause the child in a few hours to lose all resemblance to its former self. The eyes are sunken and have a bluish line half encircling their lower lids. The voice is altered, and the child utters incessant cries or moans. As the disease advances the cry may be shrill and piercing, caused by the brain becoming involved. The abdomen is shrunken; the skin is cold and has lost its tonicity, so that if pressed between the fingers the fold made by the pressure will remain for several moments.

The diarrhœa is usually profuse; the discharges being almost colorless, of a watery consistency, and having numerous white flakes floating in them. In other cases the stools are of a green or yellowish green color. The vomiting increases in severity, and all fluids are thrown up soon after being swallowed. The thirst is great, as is indicated by the child's cries, its impatience, and its alternately opening and closing its lips.

If a tumbler containing water be placed near its mouth, it will raise its head and grasping the glass with avidity, carry it to its lips, and swallow the liquid, only to reject it in a few moments.

As the disease progresses the pulse increases in rapidity, and the temperature continues to fall; the extremities, nose, chin, tongue and ears become cold. The countenance is of a leaden hue, and the features have a drawn appearance.

Death may take place within a few hours after the beginning of the attack. Usually, however, the disease runs a more protracted course, and death does not occur until from three to six days after the commencement of the first symptoms. In such cases there is an elevation of tempera-

ture; the skin becomes warmer, the abdomen tympanitic, the eyes red, the tongue red and dry. The child gradually falls into a stupor, which, with the upturned eyes, denotes that the brain has become affected. In this condition the child utters occasional sharp, shrill screams, such as are observed in diseases of the brain. Gradually it falls into a condition of complete stupor, death being preceded, in some cases, by convulsions.

But all cases of cholera infantum do not end in death. Some, even of the most threatening character, may, with proper treatment, completely recover. Thus, instead of the symptoms growing from bad to worse, they may, after two or three days, assume a more favorable aspect. The diarrhœa ceases to be so violent; the stools are less frequent, smaller in quantity and thicker in consistency. They contain more fecal matter, and have a more natural odor. The vomiting and thirst gradually subside. Food in small quantities can be taken and retained. The child, although thin and emaciated, is more natural in appearance, and, notwithstanding the continuance of a simple diarrhœa for a week or two, it may be restored to its usual health.

More frequently, however, the disease passes into the second form of summer complaint—that is, *ileo-colitis*—in which condition there are small, frequent stools containing blood and mucus mixed with fecal matter. In such cases the disease is apt to run a protracted course, although it may finally end in complete recovery.

Other cases of cholera infantum, after the acute stage has passed, assume the form of inflammatory diarrhœa without bloody stools, and, notwithstanding the disease is often protracted, lasting, in some instances, until the following cool weather, it will, under careful management, usually terminate favorably. It should be remembered that in some cases a child having an attack of cholera infantum, fol-

lowed by diarrhœa, is liable, during the continuance of the latter disease, to a return of the choleraic symptoms. Such a child should, therefore, be closely watched as long as it is the subject of diarrhœa in any form, no matter how slight, and no improper article of diet should be given it. The greatest care as to the hygienic surroundings must be taken, the object being to remove all causes that might in any way tend to rekindle the disease.

Ileo-colitis consists of an inflammation of both the small and the large bowels, and may, as before stated, follow an attack of true cholera infantum. Oftener, however, it is a distinctive disease from the very beginning.

At first the child is observed to be restless; it sighs and moans, and gives other evidence of being in pain during sleep. Its appetite is impaired, and if nursing, the milk, having an acid smell, is thrown up from the stomach. After a few days the characteristic diarrhœa, consisting mostly of blood and mucus, makes its appearance.

Such are the ordinary symptoms of an acute attack; but in many cases *ileo-colitis* begins as a common diarrhœa, which continues several days before the discharges and other symptoms indicate the true nature of the malady.

The diarrhœa is the most prominent and characteristic symptom of this disease. The frequency of the stools depends in a great measure on the severity of the attack. In cases with a moderate degree of inflammation of the bowels, the stools may not number over half a dozen during the twenty-four hours; while in a child with a high grade of inflammation they may average one per hour. The discharges vary greatly in amount, sometimes being small and mixed with blood and mucus; while in other cases they are large, watery and almost colorless, depositing on the diaper undigested casein, which looks like putty. Sometimes the discharges have a bright green appearance when passed, but

oftener the green color is not noticed until the diaper has been exposed to the air. When the stools contain much blood and mucus, the straining during each operation of the bowels is apt to be quite severe.

As the disease progresses the bowels will often become distended with gases, causing severe paroxysmal pains. Loss of flesh and great debility rapidly take place, the muscles shrink, the skin becomes dry and wrinkled, the heart is weak, and the pulse is feeble. Vomiting is often distressing, and is accompanied with great nausea; the child is thirsty, and is unable to retain even cold water, unless given in very small quantities. Sometimes as the disease progresses the vomiting ceases, or at least becomes less troublesome.

In many cases the acrid discharges from the bowels produce excoriations of the buttocks and thighs, giving the child great pain, and calling for special attention on the part of the nurse.

In fatal cases the symptoms gradually increase in severity; the swelling or distention of the bowels is more marked; the stools are more frequent, consisting mainly of mucus, blood, and sometimes pus; the tongue is red and dry; the child becomes listless, and sleeps with its eye-lids only half closed, displaying the white of the eyes; while, from disturbance of the brain, convulsions may occur, ending speedily in death.

If properly managed, most cases of ileo-colitis will end in recovery. In favorable cases, after an uncertain period, the symptoms gradually moderate. The number of stools diminish; they become more natural in appearance and contain less blood and mucus, while the straining that accompanies their discharge is not so great. The distention of the abdomen is not so marked, and pressure upon it is no longer painful. The vomiting gradually ceases and proper nourishment is retained. The fever subsides and the thirst

abates. The child appears more natural, and begins to take an interest in surrounding objects.

Instead, however, of rapid convalescence following an attack of acute ileo-colitis, the disease, even when recovery ultimately takes place, may assume a *chronic* form. In these cases the acute symptoms either pass away or are greatly modified. The fever entirely subsides, or becomes mild and less continuous. The diarrhœa is still present, but not so frequent or copious as in the acute stage, although mucus and blood may be found in the discharges, which usually remain offensive to the smell. The tongue is generally moist and natural, and the appetite may be fair. The abdomen is more distended, and the walls are thin and relaxed. The child is fretful and also greatly emaciated, for, although it may take a reasonable amount of food, yet, owing to a lack of proper digestion and assimilation, it gains little or no flesh.

Chronic ileo-colitis may run an indefinite course and end either in recovery or in death. In fatal cases the child dies of inanition, being completely worn out by the disease, or else some complication arises that hurries the case to a fatal issue. Sometimes thrush supervenes, and by interfering with the feeding and nourishment of the patient, causes death.

Diarrhœa, assuming a somewhat inflammatory character, may follow an attack of true cholera infantum, or it may begin as a simple diarrhœa without the choleraic symptoms. When it begins as an acute disease, the child is peevish and fretful. At night its rest will be disturbed, the child starting and moaning as if in pain. Usually there is but little elevation of temperature, unless the disease assumes the form of ileo-colitis, when fever may be a prominent symptom. The mouth is dry, and there is considerable thirst. The tongue is slightly coated and the appetite is poor. Sometimes the stools are small, and contain fecal matter. At other times they are copious and watery, and

have an offensive smell. The diapers usually contain white specks of undigested curd, and on exposure to air they become decidedly greenish in hue. The countenance is pale, and the eyes are somewhat sunken and hollow. The child rapidly loses flesh and becomes greatly emaciated.

Favorable cases may terminate in complete restoration to health within a week or two, or convalescence may be protracted until the approach of cool weather. Occasionally a child, during the existence of this form of diarrhœa, is suddenly seized with true cholera infantum and may perish from that disease. In other cases it may, from error in diet, or other causes, be attacked by ileo-colitis, and present all the symptoms that belong to that complaint.

Treatment of Cholera Infantum.—Careful nursing, with proper attention to the diet and the hygienic surroundings of the patient, are important factors in the management of cholera infantum. A child suffering from an attack of the disease should, without delay, be placed in a hot-water bath, to which a little mustard has been added. The object is to bring about a re-action and re-establish the circulation in the blood-vessels of the surface. To do this the child should be kept in the bath four or five minutes. Care must be taken that the water is not so warm or so strongly impregnated with mustard as to burn the child's tender skin. If the vomiting and excessive purging continue, and warmth is not restored to the skin, the bath can be repeated three or four times during the day. If, however, the child's surface becomes warm, and the vomiting and purging continue, the bath can be dispensed with, and a large mustard plaster, made as heretofore directed, by mixing mustard and flour with molasses, should be applied so as to cover the front of the chest and the abdomen. This can be kept on until it produces some irritation, when it should be removed, to be re-applied if necessary.

Attention should now be paid to the obstinate vomiting. No medicine has much effect upon this symptom, and the only one that promises any benefit at all is calomel, which may be given in doses not larger than a good-sized pin-head, mixed with a little white sugar and washed down with a teaspoonful of cold water. This may be repeated every two or three hours if the vomiting continues.

In these cases the stomach must have rest; hence medicines and teas of various kinds, often recommended by injudicious friends, must not be given, and even cold water, the least objectionable of all liquids, must be allowed only in spoonful doses. On account of the intense thirst, the water should be given every few minutes, or else very small lumps of ice may be placed in the child's mouth to relieve the burning thirst. Milk, during the first stage of the disease, must not be allowed. Even if a child is nursing a mother that is in ordinary health, it must be weaned for the time being, and after recovery it can again be put to the breast. During the child's sickness the mother's breast should be artificially drawn to prevent the milk from drying up.

It is usually taught that the mother's milk, being the natural food for an infant, is the best nourishment it can take when it is sick. But when a child is taken suddenly ill with cholera infantum the mother's nervous system suffers a shock; she becomes nervous, anxious, and does not sleep well. Under such circumstances her milk rapidly undergoes a change in quality, rendering it so injurious to the sick child that but little improvement can be hoped for unless it is removed from the breast.

Sometimes the mother refuses to even temporarily wean her child, and in such cases she may occasionally give as much as a spoonful of her milk to the infant, carefully watching its effect. If reasonably well borne, it may be continued; but in all cases where vomiting and purging continue to any

great extent, the milk must be entirely withdrawn from the child until convalescence is established, after which it can take the breast without disturbing its stomach or bowels.

When it is desirable to limit the quantity of milk taken at a time, it is best to draw the breast with a pump, or by other means, before the child is allowed to nurse.

If the infant be very thirsty, it is best to give it a small spoonful of cold water before placing it to the breast.

It is possible that, could a healthy wet-nurse be secured—one whose milk would remain unaffected by the child's sickness, and who took her usual amount of sleep and good food—the child might, with safety, be allowed to take small quantities of the breast-milk at a time. Good wet-nurses are, however, hard to secure, especially in country districts, and therefore the mother must find some artificial nourishment to take the place of her own milk—a food that will agree well with the patient, and that will not add to the vomiting and diarrhœa.

While the vomiting is persistent, no attempt should be made to feed the child. No good can result from putting nourishment into its stomach under such circumstances, for it will be ejected in a few minutes. It is not the amount of food taken into its stomach that gives strength to the system, but the amount that is retained and digested. Hence, after the child has been taken from the breast, it may be some time before it will be safe to begin feeding it with artificial food, even in small quantities.

Until such food can be borne, nothing but small pieces of ice placed in the mouth, and cold water, a teaspoonful at a time, should be allowed.

After the vomiting has to a great extent ceased, artificial feeding may be resorted to, but in the most cautious and careful manner. At first a dessertspoonful of milk and water, or milk and barley water (prepared as directed in the article

on "Nursing and Feeding") may be given by means of the nursing bottle. If it is thrown up in a few minutes, or if it passes off by the bowels in an undigested state, it should be discontinued, and recourse had to the cream and water mixture, or, what may be better, to the condensed milk, or Lacto-Preparata, or other infant food preparations alluded to in the article on "Nursing and Feeding," which contains full directions for the preparation and feeding of artificial foods.

Whatever article may be selected under these circumstances, only a very small quantity of it should be given at first; otherwise the vomiting and purging will most certainly return. By commencing with small quantities at a time, the stomach will gradually become accustomed to the presence of food, and the quantity can be increased with safety. If, after commencing the use of artificial food, the case progresses satisfactorily, no change should be made in the diet; but if a relapse occurs—the vomiting and purging returning—it is evident that the food disagrees with the child, and some change in its administration must be made. It has probably been given in quantities too large for the weakened stomach to digest, and all that is needed is to give less of it at a time, going back to a dessertspoonful until the stomach is able to digest larger quantities, when the amount may gradually be increased.

Sometimes it is necessary to change the kind of food, as well as to reduce its quantity, and an intelligent mother will soon learn to manage these matters in a satisfactory manner.

But little has been said about giving medicines in this disease, for the reason that most cases are better managed without the extensive use of drugs, and when they are indicated, no one but a physician should prescribe them.

If a child be cutting teeth during an attack of summer complaint in any of its forms, the gums, if swollen and dark-

colored, should be lanced, so as to allow the teeth to make their appearance without delay.

The treatment of ileo-colitis, so far as the importance of proper feeding is concerned, does not materially differ from that of cholera infantum. In ileo-colitis the vomiting is not so persistent and the discharges from the bowels are not so large or exhausting as they are in cholera infantum; hence, children do not emaciate as fast in the former as in the latter disease.

In many of these cases it is just as necessary to remove the child from its mother's breast as in cholera infantum.

The successful management of ileo-colitis consists mainly in the proper nursing and feeding of the child. If one kind of artificial food disagrees, another should be tried, and small quantities only should be given at first, to be gradually increased as the child's stomach becomes able to retain and properly digest it.

Sometimes a child afflicted with ileo-colitis passes considerable blood and mucus with the stools. If there is much straining it may be necessary to combat this symptom by the use of a drug. Although opium, in any form, should rarely be used in summer complaint, yet the straining at stool, in some cases, is best relieved by an injection containing three or four drops of laudanum to a dessertspoonful of very warm water, if the child is a year old. At six or eight months, two or three drops may be used. The injection should be given with a small syringe, taking care that no air is thrown into the bowel. After the injection a small cloth can be placed against the end of the bowel and pressure made with the hand for a few minutes to prevent the fluid from being returned. The injection may be repeated once or twice a day, care being taken not to employ it except when the straining and bloody stools clearly indicate the necessity for its use.

If properly managed from the beginning, but few cases of ileo-colitis will become chronic; but when such a result does occur a physician must be consulted and the child placed under his treatment. This form of summer complaint is liable to last for months, and requires great care and skill in its management.

The treatment of diarrhœa, occurring during the process of teething, or following an attack of cholera infantum, consists mainly in properly regulating the child's diet. Most cases will recover without the use of drugs if carefully nursed and fed, and when the disease is severe medicines will have but little effect in curing it unless the feeding is properly attended to. When the vomiting and purging are obstinate the child will have to be taken from the mother's breast until these symptoms are controlled to a great degree. It should be placed on that kind of artificial diet that best agrees with it, and confined to a small quantity at a time until the stomach is able to retain and digest the food without trouble, when the quantity can be gradually increased. As the child improves, if the vomiting ceases and the discharges are less frequent and smaller in amount, the mother may again place it to the breast, and if the milk agrees with it she can continue to let it nurse; but if the vomiting returns, or if the diarrhœa increases, it will be necessary to again give it artificial diet. In short, the rules governing the feeding of infants suffering from cholera infantum and ileo-colitis apply with equal force to those who have this form of diarrhœa.

Occasionally, in spite of the most careful management, cases of diarrhœa assume a chronic form; the child, although much better than when first attacked, continuing to suffer more or less from the disease for a long time. In fact, in many cases, the trouble subsides only upon the approach of cool weather, when the child begins to regain its health,

strength and flesh, and in a little while it is as robust and strong as if it had never been the subject of disease.

A child suffering from this, as well as from other forms of summer complaint, that does not seem to improve after careful attention has been paid to feeding and other hygienic measures, should be given over to the care of a physician, in order that it may receive such medical treatment as will aid in restoring it to health.

Thrush is sometimes met with during an attack of summer complaint, and often proves not only troublesome, but dangerous to life, by interfering with the proper feeding and nourishment of the child; thus aiding in the fatal exhaustion that sometimes accompanies the latter disease. The reader is referred to the article on thrush, contained in another part of this book, for information in regard to the management of the affection.

The excoriations on and about the buttocks, so often present in the different forms of summer complaint, and especially in ileo-colitis, require careful attention, as they are a source of suffering as well as danger to the child.

These excoriations are produced by the urine and other acrid discharges coming in contact with the child's tender skin. The nurse should, therefore, see that the diapers are changed as soon as they are soiled, either by urine or the discharges from the bowels. When the diaper is removed the parts should be thoroughly cleansed by allowing warm water to flow over them from a sponge or cloth. No rubbing must be allowed, but after the stream of warm water has washed away all the discharges, a soft cloth may be gently pressed against the parts to dry them. They can then be anointed with the oxide of zinc ointment, and a clean diaper applied.

If the excoriations do not improve under this treatment, they should, after being washed with warm water, be bathed

with a mixture consisting of a tablespoonful of alcohol and a half pint of water. A solution of sugar of lead—two even teaspoonfuls to a pint of water—is also a most valuable application, and may be used in place of the alcohol wash.

In severe cases, instead of the oxide of zinc ointment, one made by mixing one-fourth of a teaspoonful of calomel with a tablespoonful of vaseline or lard, may be applied. This ointment, however, should be used with caution, and only in extreme cases, as there might be a possibility of its producing salivation.

CHAPTER XV.

Fevers.

EPHEMERAL FEVER.

SOME children are peculiarly susceptible to attacks of fever from slight causes. After retiring at night in apparently good health, they are noticed before morning to be restless and feverish. Usually they are thirsty, have headache, and their bowels are costive. The tongue is slightly coated, and there is but little desire for food. The child is rarely delirious, but it is nervous, and its muscles twitch while it is sleeping.

Sometimes the attack comes on during the day-time; the child, ceasing to amuse itself at play and becoming drowsy, desires to be put to bed. In a day or two it is as well as ever, but in the course of a few weeks the same symptoms are observed, the child again becoming feverish, restless, and nervous.

The liability to attacks of *ephemeral fever* may continue for a long time, but as the child grows older, and its digestive powers become stronger, the tendency to such attacks will cease.

Children who are subject to this disease are usually delicate, of nervous temperament and slow growth. The attacks from which they suffer are supposed by their parents to be "bilious," or if they live in a locality where intermittent fever prevails, the trouble is supposed to be of malarial

origin. In many cases the mother believes that her child suffers from worms.

In nearly every case the cause of the disease should be sought for in the digestive organs. Those who suffer from ephemeral fever, as a rule, have a capricious appetite, and at times are prone to indulge in an excessive amount of food. They eat a great deal, but do not become fleshy. Owing to the patient's weak digestive powers, much of the food is not used in building up the system, but becomes irritating to the stomach and bowels. As a result of such irritation, fever occurs and the child is sick for the time being.

But not only does an excessive amount of food taken by the child produce ephemeral fever, but sometimes the disease is caused more by the *quality* than the *quantity*. Thus, if the food is of an indigestible nature, or of such character as to readily undergo fermentation in the stomach, fever will likely result, even though the amount taken be small.

Treatment.—In the management of this disease the first thing to do is to regulate the quantity and quality of the diet. Sufficient food that is nourishing and easily digested should be allowed at regular intervals, and the practice of eating between meals, so common among children, must not be permitted. Sweetmeats and all articles containing a large proportion of sugar should be avoided. The bowels ought to be kept regular, and for this purpose an occasional dose of the syrup of rhubarb may be given.

At the commencement of an attack of ephemeral fever, a dose of mild purgative medicine should be administered if the bowels are at all constipated, or if the child has partaken of too much food, or of food of an improper kind. If the fever is at all severe a few drops of sweet spirits of nitre, mixed with a teaspoonful of water, can be given with

advantage. The fever usually lasts but a day or two, and after its subsidence the child will be weak and languid, requiring rest and strict attention to its diet.

During the intervals between the attacks of the disease the child's general health should be attended to. Plenty of outdoor exercise during good weather must be taken, and close and prolonged confinement in the house avoided.

Tonics, combined with iron, given for weeks or months, will be of great benefit. A child two years old can take a half grain of the tartrate of iron and potash, mixed with eight drops of the tincture of colomba and a teaspoonful of water, three times a day.

Eight or ten drops of the elixir of bark and iron, with a teaspoonful of water, given three times a day, forms an excellent tonic for such cases.

Although, as a rule, iron should always be given after meals, yet the above preparations, being non-irritating to the stomach, are best given before meal-time.

INTERMITTENT FEVER—AGUE.

Intermittent fever is not infrequent among children who live in malarious districts. Children born of mothers who suffered from ague or intermittent fever during pregnancy are often afflicted with the disease from birth. In such cases the spleen and liver are enlarged, and the skin may have a yellowish hue, owing to the diseased condition of the blood. Such children never seem to be well. They are weak; usually have a poor appetite and feeble digestive powers; their ability to resist disease is impaired, and they easily fall victims to various acute affections.

The germs that produce intermittent fever may lie dormant in the system for weeks or months. Sometimes persons, after living in a highly malarious district for years without having any manifestation of the disease, are at-

tacked with ague soon after moving to a country that is entirely free from malaria.

Animals are not susceptible to the poison of ague. While but few human beings can expose themselves for any great length of time to its influence with impunity, animals living in the most pronounced malarial districts never become affected with the poison.

Persons can reside in low, marshy districts in cold weather without danger of contracting ague, and even during the rainy season, if the ground is submerged, there is but little danger of becoming affected. But when the water recedes, even if the ground is only partially exposed to the heat of the sun, the malarial poison becomes quite active.

Again, even in elevated and dry regions similar results follow great disturbance of the soil that has not been stirred for a long period. Thus, in countries not highly malarious, the ploughing, during the warm season, of fields that have not been disturbed for many years, will often produce intermittent fever in those who live near by. In cities where the disease prevails in a mild form, the making and repairing of streets, as well as the digging of the ground to lay gas and water-pipes, often leads to a great increase of malarial diseases.

Persons living in places where malaria abounds often suffer from enlargement of the liver and spleen after long-continued attacks of ague. As a result of such organic changes the blood becomes affected, leading to a peculiar yellowish color of the skin, and sometimes to dropsy of the abdomen, the chest and the lower limbs.

The yellowish hue of the skin and the enlargement of the liver and spleen are sometimes met with in infants born of mothers who have long suffered from malarial disease.

A paroxysm of intermittent fever is composed of three distinct stages, called the *cold*, *hot* and *sweating* stages.

The cold or shivering stage is characterized by an attack of shivering of more or less violence, lasting usually from a half hour to an hour or longer. The shivering begins in the lower part of the back and extends to other parts of the body. In some cases it is so mild that the patient can easily control the action of his muscles, while in others he loses such control, and his whole body becomes so agitated that he shakes the bed upon which he lies. There is intense thirst; the tongue is moist; the urine is scant and pale, and has the appearance of water; the appetite is lost, and nausea and vomiting are often present.

The hot stage begins gradually by the shivering becoming more transient and alternating with warm flushings. The heat, which at first is slight, increases gradually until it is intense. The patient changes his position in bed frequently, hoping to find a cooler place upon which to rest. The headache increases, being, in some cases, almost unbearable. The loss of appetite and the thirst continue; the urine is still scant, but has a deeper color.

In the beginning of the sweating stage, the skin gradually becomes moist, the moisture increasing until the whole body is bathed in a profuse perspiration. The patient feels better, and his headache gradually disappears. The urine, red when passed, usually deposits, on cooling, a sediment the color of brick-dust. The fever gradually declines, and the pulse diminishes in frequency.

After the paroxysm of fever terminates, the patient enjoys a period of comparatively good health until a return of the chill.

Intermittent fever occasionally assumes a pernicious or congestive form in malarial districts during very wet seasons. At other times congestive chills are rarely met with, although intermittent fever may be prevailing extensively.

In children, an attack of intermittent fever may commence with a convulsion instead of a chill. In other respects,

also, the symptoms of the disease in children differ somewhat from those observed in adults; thus, the shivering is not so pronounced, being, in some cases, entirely absent or overlooked. Between the paroxysms of the disease the child is not so well—being fretful and somewhat feverish—as those who have intermittent fever in adult life. Besides, the disease in childhood is more obscure and the paroxysms are not as regular as later in life.

Children living in malarious districts often exhibit signs of ill-health without suffering from actual attacks of fever. Such patients are thin of flesh and weakly. Their skin has an unhealthy appearance, being of a pale yellowish color; their appetite is poor, and their bowels are irregular. In rare cases there may be swelling of the lower limbs and other signs of general dropsy.

These symptoms may depend upon the changed condition of the blood, or disease of the kidneys, caused by chronic malarial poisoning.

Treatment.—Quinine is the principal remedy used in the treatment of intermittent fever. It is well borne by the young, and a child one year old can take one grain four or five times a day until relieved. The quinine should be dissolved in ten or twelve drops of sweet spirits of nitre and given in a teaspoonful of syrup of ginger or orange peel.

After the fever has been arrested the quinine can be continued in grain doses twice a week until the child has regained its usual health.

If possible, a child affected with chronic ague should be removed to a place that is free from malaria.

If the quinine is not retained by the stomach, the difficulty can sometimes be overcome by the application of mustard over the front part of the abdomen and chest before giving the medicine.

The bowels should be kept open, and for this purpose the syrup of rhubarb may be given in full doses.

During the hot stage the fever can be moderated by administering sweet spirits of nitre in suitable doses every two or three hours.

Cold cloths applied to the forehead, and bathing the body and limbs with tepid water, will be soothing and beneficial.

The thirst should be allayed by giving cold water in small quantities as often as may be necessary.

The diet must be nourishing and easy of digestion, and partaken of in small quantities at a time.

Since intermittent fever in children is often complicated with enlargement of the liver and spleen, as well as other diseased conditions of the system, it is essential that each case should, when possible, be treated by a competent physician.

INFANTILE REMITTENT FEVER—TYPHOID FEVER.

Fifty years ago medical writers held that typhoid fever was limited to adult life, and never occurred in childhood. Later writers, however, consider the disease known to the old authors as infantile remittent fever to be true typhoid fever. That the essential features are the same is not doubted; but in children the disease presents certain peculiarities that do not belong to the typhoid fever of adults, and hence we prefer to treat of it under the old name of *infantile remittent fever*.

Causes.—The disease is slightly contagious; but most cases are caused by absorption into the system of a specific poison generated by the decomposing discharges of typhoid patients, and largely disseminated by emanations from privies, cesspools and other places where such discharges are deposited. The disease cannot be contracted by inhaling the breath or the emanations from the skin of typhoid patients. The patient's discharges are supposed to be harmless when

first passed, but after standing until putrefaction begins they become dangerous. The poison is received into the system through the air-passages and the alimentary canal. In the latter case the diseased germs enter the body most usually through the medium of impure drinking-water. In some cases the disease is caused by drinking milk that has been contaminated by the addition of water containing the germs of typhoid fever. The disease may also arise from inhaling sewer-gas that has escaped from waste-pipes in houses where the plumbing is defective.

In infantile remittent fever, Peyer's glands, situated in the small intestine, are swollen and ulcerated. The associated mesenteric glands are also involved, being enlarged and softened. In favorable cases the ulcerated glands heal in the course of two or three weeks; but in many fatal cases the ulcerative action extends until it perforates the coats of the intestine, permitting its contents to escape into the peritoneal cavity. The kidneys are sometimes in a state of congestion; the mucous membrane of the air-passages is usually red and congested, while pneumonia of a low grade is occasionally present.

Symptoms.—The disease begins to manifest itself within ten to fourteen days after the poison has been received into the system. The fever begins so gradually that it is difficult to fix the precise date of its commencement. Usually the child complains of headache, is languid, and has but little appetite. The tongue is covered with a thick white fur, through which little red points are seen. The bowels at this stage of the disease are sometimes confined, at others rather loose—one or two offensive stools being passed each day. The child is stupid and drowsy, often complaining of pain in the head, body and limbs. During the first week of the disease the patient may not take to his bed voluntarily, but insist on being up and around the house.

At the end of a week the symptoms become more pronounced. The abdomen is swollen and pressure upon it produces pain. The bowels contain gases, which, by moving from one part of the intestines to another, cause a gurgling sound. The bowels may be constipated, although diarrhœa is usually present, the discharges having the color of yellow ochre.

After awhile the headache subsides and the patient becomes delirious at night. He lies quietly on his back and takes but little notice of things around him. His cheeks are flushed with fever, and frequent draughts of cold water are required to allay his thirst. The pulse varies greatly in different cases, sometimes being only moderately accelerated, while at others it is greatly increased in frequency. There is usually a difference of from two to three degrees in the morning and evening temperature, it being about 101° to 102° in the morning and 104° to 105° in the evening.

As the disease progresses, the cough often becomes troublesome, depending, in many cases, upon inter-current bronchitis or pneumonia, which is apt to occur during the course of typhoid fever.

During the second week of the disease the pulse increases in frequency, and the child becomes weaker. The abdomen is greatly swollen, and gives a hollow sound when tapped upon. The diarrhœa increases, and the discharges sometimes contain blood. The patient's indifference to surrounding objects is more marked; he sleeps most of the time during the day, and at night he is restless and delirious. About this time twitching of the tendons of the muscles of the wrist is noticed.

In mild cases the fever begins to diminish at the beginning of the third week, the temperature in the morning being, perhaps, but little above the normal standard, while in the evening it rises two or three degrees. Although ex-

tremely weak, the child begins to show signs of improvement. His countenance is less dull, and the abdomen is not so swollen and tense. The diarrhœa is not so troublesome, and the discharges are more natural.

In some cases of infantile remittent fever the symptoms are severe from the start. Occasionally the disease commences with a chill; but usually the initial symptoms consist of fever, headache, languor and drowsiness. The sleep is disturbed, the child often crying out as if in pain, or else talking incoherently. The fever is high; the skin dry and pungently hot. The tongue soon becomes red and dry, the abdomen swollen and tender, while, in most cases, diarrhœa is persistent.

As the disease progresses all the symptoms become intensified; the discharges from the bowels are passed without the patient's knowledge; the lips and teeth are coated with a dark, dirty deposit (sordes), while the tongue is dry, tremulous, and covered with dark-brown crusts.

Even from this condition the patient may recover; but, owing to his extreme debility, it will require several weeks for him to regain his usual flesh and strength.

In fatal cases the symptoms at the beginning of the third week, instead of gradually yielding, become intensified. The disturbance of the nervous system is more marked; the twitching of the muscles is increased, and the patient sinks into a deep stupor, which is interrupted by violent delirium and efforts to get out of bed. The abdomen is greatly swollen, the stools are frequent, are passed involuntarily, and at times contain blood. The respirations are hurried and noisy, and towards the close of the disease the patient picks at the bedclothes and at imaginary objects in the air.

In mild cases the tongue may be moist during the whole course of the disease. Oftener, however, as the fever pro-

gresses, the tongue becomes dry—the dryness beginning at the tip and sides and gradually spreading over the whole surface. Further along in the course of the disease the tongue is extremely dry, harsh to the touch and deeply cracked or fissured. Sordes, or black, sticky mucus, collects on the teeth and gums, while the lips are parched and cracked, with dark scales adhering to them.

Throughout the disease the urine is scant and high-colored, and in the worst cases it is passed without the patient's knowledge.

The skin is usually hot and dry, but sometimes it is moist, and in favorable cases, during the third week there may be copious perspiration.

Infantile remittent fever in its earlier stages may be mistaken for some other disease. In childhood many diseases begin with symptoms so much alike that it may be impossible in some cases to establish a positive diagnosis during the first few days. If a child is noticed to be dull and languid, with a fever that is high in the evening and two or three degrees lower the next morning for several days, without the symptoms that belong to disease of any of the important organs of the body, we may suspect the existence of infantile remittent fever. If, in addition to the above described symptoms, the patient has a swollen and tender abdomen, with a tendency to diarrhœa, our suspicions are almost confirmed. In making out a diagnosis of infantile remittent fever, care must be taken to exclude tubercular disease of the brain, bowels and lungs. Acute catarrh of the stomach and inflammatory diarrhœa may also be mistaken for the disease under consideration.

Infantile remittent fever, although always a serious and often a dangerous disease, is not attended with as high a death-rate as might be expected, considering its protracted course and the severity of its symptoms. Most cases re-

cover, provided skillful medical assistance is obtained in the beginning of the disease. When death occurs it is usually due to peritonitis, the result of perforation following deep-seated ulceration of the bowels. Sometimes bronchitis or pneumonia intervene during the course of infantile remittent fever, and, by interfering with respiration, may produce death in cases that would otherwise end in recovery.

Treatment.—Every case of infantile remittent fever should be placed in charge of a medical practitioner without delay. Although excessive drugging is worse than no treatment at all, yet the safety of the patient depends upon careful watching, good nursing, proper feeding, and the adoption of remedies suitable to meet the various complications that may arise during the course of the disease. But the mother will have much to do in the way of feeding and nursing her child under the physician's directions.

Unless the water used for drinking purposes is known to be pure, it should be boiled and allowed to cool before it is given to the patient.

The child should be placed in bed at once, and absolute rest must be insisted upon. If possible, the room should be separated from others that are occupied by the rest of the family—one in the upper part of the house being preferred. The room should be large and properly ventilated, the temperature being kept as near 66° as possible. The patient should be covered with light bedclothes, sufficiently warm to prevent chilliness, while a night-shirt, made of fine white flannel, should be worn next to the body.

All discharges from the bowels must be disinfected and taken from the room soon after being passed, and sheets, cloths, and other articles that have been soiled must be treated in the same manner.

Cold water, sufficient to allay thirst, should be given in small quantities at a time, as often as may be necessary.

From the beginning of the disease until the child has fully recovered, care must be exercised in regard to the diet. No article that is irritating to the stomach or bowels, or difficult of digestion, or that leaves a large residuum after being digested, should be allowed. Cases of typhoid fever have been lost during convalescence by a disregard of this injunction. In this disease the little glands of the bowels (Peyer's glands) are ulcerated, and although during convalescence they are in a condition of repair, yet their structure is extremely delicate and easily injured. The passage of irritating and undigested food and excrementitious matters over them is liable to cause perforation of the bowels, which in nearly all cases is followed by death. All articles that are liable to undergo fermentation and form acid should be avoided. Farinaceous articles, and fruits of all kinds, had better not be given.

The patient should take his nourishment in a liquid or semi-liquid form. Of all the articles adapted to the nourishment of a person with typhoid fever, milk, when well borne, is the most important. It is highly nutritious, easily digested, and leaves but little residuum to disturb the ulcers along the course of the bowels. If the child is young, an equal part of barley water, boiling hot, should be added to the milk to prevent the formation of large lumps of curd in the stomach.

When the milk is not well borne, or when the child becomes tired of it, recourse should be had to strong beef essence, or to one of the infant-food preparations.

In this disease nourishment should be taken in prescribed doses and at stated intervals. The quantity of food and the time for giving it must be regulated by the age of the patient and the condition of his digestive organs. If over-fed, nausea, restlessness, increased fever, and possibly increased diarrhœa, will result.

In the beginning of infantile remittent fever, the mistake is often made of giving the child too much purgative medicine. While a single dose of castor oil, or syrup of rhubarb, may be useful, the repetition of the purgative two or three times will most likely add to the patient's danger by augmenting the disease of the bowels and increasing the diarrhœa.

During the progress of the disease many symptoms may arise that will require the administration of medicines to combat; but such matters must be left solely to the judgment of the physician who has charge of the case. Although simple cases of this disease require but little medicine in their treatment, yet various complications may occur that will render active medication necessary.

Diarrhœa may sometimes be so persistent and exhaustive as to call for special remedies for its amelioration. These should be of a simple nature, and given in small doses. The use of strong astringent medicines to suddenly check the bowels must be avoided, as they invariably add to the existing disease of the intestines.

If hemorrhage from the bowels be profuse, strong astringents may be required; but no one save a physician should prescribe them.

A person suffering from typhoid fever should not be allowed to sit upon a vessel while having an operation on the bowels, or assume an upright position for any purpose whatever, until the physician has given him permission to do so. A disregard of this caution may lead to perforation of the bowels, followed by speedy death.

CHAPTER XVI.

Nervous Diseases.

CONVULSIONS.

CONVULSIONS may be caused by disease situated in the brain itself, or by disturbances in other parts of the body acting upon the brain through the nervous system. When caused by disease of the brain, they usually indicate a fatal result, but recovery may be looked for in most cases that are produced by reflex action—*i. e.*, from irritation in other parts of the body.

Convulsions occur at a very early period in congestion of the brain, and are usually preceded by great drowsiness, vomiting, and pain in the head.

In tubercular disease of the brain, convulsions will, in some cases, attack a child seemingly without warning; but a careful inquiry into the case will often disclose the fact that for some time previous to the seizure the child was dull, drowsy, without much appetite, and had constipated bowels, accompanied, most likely, with headache.

Convulsions may also happen during the progress of various acute diseases, such as whooping-cough, scarlet fever, measles, etc.

If the child is affected with diarrhœa during the process of teething, it is liable to have convulsions. In such cases the trouble may result either from the irritation produced by a tooth pressing upon a swollen gum, or from the

exhaustive diarrhœa producing disturbance of the circulation in the brain, or from both.

One of the most frequent causes of convulsions in children is the over-loading of the stomach with indigestible food. I have known death to follow the eating of grapes, the skin and seed producing sufficient irritation to cause fatal convulsions.

Obstinate constipation, by locking up the irritating contents of the bowels, may give rise to convulsive attacks in children.

The presence of worms in the stomach or bowels may cause convulsive seizures.

In exceptional cases, a child may have a stone in the kidney, which, by changing its position in that organ, may produce sufficient pain and irritation to cause convulsions. In the only case of the kind that I have seen, the urine contained blood both before and after the convulsive seizure.

At the beginning of a convulsive attack the muscles of the face twitch, while the body is stiff and immovable. In a short time the head, with a twitching motion, is drawn backwards; the limbs jerk, being violently flexed and extended; the eyes are fixed and do not see; the breathing is hurried, labored and irregular, and the skin is bathed in a profuse perspiration. After this condition has lasted a minute or two, or perhaps longer, the convulsion ceases; the child either falls asleep, or lies for a short time in a dazed condition and then bursts into crying. Sometimes it sinks into profound sleep, which may be quiet or attended with slight twitching of the muscles, or, lastly, it may die in the convulsive attack. Occasionally, when the convulsion depends upon disease of the brain, certain muscles of only one side of the body are affected.

The treatment of these cases must be conducted by a physician, but pending his arrival the mother should not be idle. The child should be placed in a warm bath as soon as

possible. If it is known that its stomach contains indigestible food, a quick emetic ought to be given it at once. For this purpose the ipecac, either in powder or syrup, will be safe and effective. After vomiting has taken place, an injection of warm water, or the administration of a dose of castor oil, will serve to clear out the contents of the bowels.

If the convulsion is caused by retention of fecal matter, an injection of warm water and lard should be used without delay, to be quickly followed by a dose of castor oil.

If the child's gums are badly swollen and painful, they must be lanced at once.

If convulsions are caused by worms in the stomach or bowels, a dose of the oil of wormseed in glycerine and castor oil should be given as soon as possible, and a mixture of turpentine and lard rubbed on the child's abdomen.

When convulsions are produced by grave disease of the brain or kidneys, or when they occur upon the non-appearance or the recession of an eruption in certain acute diseases of the skin, as scarlet fever and measles, the efforts of the mother should be confined to the use of the warm-water bath and securing quiet and plenty of air for her child. The medical treatment should be conducted only by a physician who understands the cause of the disease and how to apply the remedies best suited to each individual case.

CHOREA, OR ST. VITUS' DANCE.

St. Vitus' dance is not a frequent disease of very early childhood, though occasionally cases have been met with in children under four years of age.

The disease usually comes on gradually, unless it is caused by a sudden shock, as from fright, a fall, a blow, etc., when it may arise suddenly.

Before the peculiar movements of St. Vitus' dance are noticed, the child is usually out of health. Its temper

changes; it is sad, and becomes capricious and easily agitated; it is irritable, seeks solitude, and keeps away from its playmates. Its memory is not retentive, and it is incapable of fixing its attention long on any subject. It usually complains of headache and pains in the limbs; the appetite diminishes, and digestion becomes disordered.

The child is inclined to be constantly moving from place to place, and is uneasy unless its limbs are in constant motion. Afterwards it has awkward, fidgety movements, which are limited to one side of the body, and are beyond self-control. At first the arm is affected, and afterwards the leg becomes involved, causing the child to stumble and fall occasionally when walking. In a little while the movements extend to the other side of the body, and the muscles of the face participating in the disease cause the child to make the strangest grimaces. Voluntary control over the hands is so much impaired that when attempting to grasp anything the patient makes several attempts, frequently missing the object, and at last, seizing it convulsively, drops or flings it away.

In some severe cases the muscles of the leg are so much affected that the patient cannot walk or even stand alone. The tongue is protruded with difficulty, and with a jerking motion, rendering it difficult for the physician to examine it. The speech is stammering and almost unintelligible, and swallowing is difficult and performed with spasmodic gulps. The muscular twitching may continue even when the child is lying in bed. In very bad cases, if long continued, the intellect is dulled, the manner and expression becoming almost idiotic.

Sometimes the malady never passes beyond the mild form, consisting of an inability to hold objects in the hand, to keep the arms from occasionally twitching, and to prevent the momentary jerking of the face and head.

Death from chorea is extremely rare, and when it does happen it is from exhaustion, the result of the continued and violent movements of the body. But, although chorea seldom causes death, yet it is a disease exceedingly difficult to cure, and is liable to run quite a protracted course.

Some cases recover in about a month, while others may last several months, or even a year or two, the average duration being about seventy days. After a supposed recovery it is not unusual for the disease to return. The relapse may happen soon, or it may occur months or years after the patient has been, to all appearances, well of the disease. These recurrences may take place several times; but each attack is usually milder than the preceding one.

The medical treatment of St. Vitus' dance must be left to the physician, but much can be done by the mother to hasten the cure.

When the exciting cause of the disease is known, it must be removed, if possible, and in all cases the greatest care must be paid to the patient's general health. Exercise in the open air, and plenty of such food as agrees with the patient and is easily digested, must be insisted upon. Gymnastic exercises have an excellent effect upon choreic cases, and skipping the rope is one of the best exercises that can be employed. Warm salt-water baths, followed by gentle rubbing of the body, is a useful measure.

It is of the first importance that the patient should not have his attention called to his disease. Many cases are made chronic, and the cure greatly delayed, by the discouraging remarks of injudicious persons. The malady is painted in heightened colors, and useless and unnecessary sympathy is expressed to the patient. Sometimes cruel and brutal companions ridicule his infirmity, thus causing him to lose control to a still greater degree over his jerking muscles.

Patients with this disease should be encouraged to make every exertion to direct the movements of the limbs, and they should be assured that they are making progress towards recovery. It must be instilled into their minds that they are sure to get well in the end, and that much can be done by the exercise of their will towards overcoming the infirmity.

Laryngismus stridulus, or child-crowing.

This is a somewhat rare complaint, and occurs only in very early life. It is most frequently seen during the period when the child is cutting its teeth, but it may happen before or after that event. The disease is of nervous origin and is not attended with fever. It is characterized by crowing inspirations and a temporary suspension of breathing. The cough and the voice are not hoarse as in croup. As the disease progresses it becomes associated with other convulsive symptoms, as crossed eyes, drawing in of the fingers upon the hands and of the toes on the bottoms of the feet, and general convulsions.

In some cases, laryngismus stridulus is caused by irritation and debility produced by teething, while in others it arises from digestive disorders dependent upon improper food. Various other causes may also give rise to the disease. While it is most usually met with in nervous children who are feeble and of scrofulous or rickety constitution, it may also attack those who seem to be robust and healthy. During the period of teething the nervous system is in an irritable and excitable state, and hence causes that at other times might not appreciably affect the child may, under these conditions, lead to convulsive attacks.

The disease usually comes on by degrees, the child loses its appetite and is fretful during the day and restless at night, presenting many ill-defined symptoms usually as-

cribed to teething. After these symptoms have lasted a few days, or a week, a slight crowing sound is occasionally heard with the child's respiration. This is first noticed when the infant awakes from sleep, or during a spell of crying, or when it is nursing. The sound usually increases in intensity in proportion to its frequency. The attacks may occur either in the day-time or at night, but they are more frequent during the latter period.

At first the child's general health may not be perceptibly affected during the intervals between the attacks; but it will not be long before the symptoms become graver and give rise to great alarm. Sometimes the disease begins suddenly, and before the parents have noticed any departure from ordinary health, the child is seized with a paroxysm of difficult breathing; the larynx closing spasmodically, prevents the air from entering the lungs in full quantities. As the air reaches the lungs through a small aperture, a crowing sound during inspiration is produced, giving rise to the name of the disease. Owing to the difficulty of getting its breath, the child's body is thrown backwards, while its eyes are fixed and staring and its nostrils are widely dilated. If the paroxysm continues a few seconds the face becomes livid, the extremities cold, and the fingers are drawn in on the palms of the hands and the toes on the soles of the feet. After a few seconds, or a minute or more, the spasm ceases, the child takes a full inspiration, bursts out crying and soon regains its natural appearance; or, if the fit has been very severe, it may return slowly to its natural condition, being drowsy and languid for awhile. If the disease continues to progress, the fingers, toes, arms and legs become permanently contracted, and the child may die in convulsions.

The disease may terminate fatally in a short time, or it may continue, at intervals, for weeks or months, ending finally either in death or in recovery.

The only disease with which laryngismus stridulus is likely to be confounded is false croup. Indeed, some writers make this mistake. In false croup, hoarseness and cough are marked symptoms; in the crowing disease they are absent. The fact that the paroxysms come on in the daytime as well as at night, and that they are accompanied by spasms of the fingers, toes and other parts of the body, also serves to distinguish it from false croup.

The treatment consists, first, in removing, when possible, the cause that gave rise to the disease. In infants, before teething, the trouble is usually produced by over-feeding, or by food of an improper kind. If, therefore, the child is nursing the mother's breast, the quantity taken at a time must be restricted; and if the disease continues, it is probable that the mother's milk does not agree with the infant, in which case it should be taken from the breast and given artificial food. If the child is not taking the mother's milk, but is being fed with some other nourishment, a change must be made, and the infant placed on that kind of food that is found to agree with it best. The chapter on "Nursing and Feeding" contains full directions for preparing the different kinds of infant foods.

The state of the bowels must be inquired into, and if constipation exists a mild purgative, such as castor oil or syrup of rhubarb, can be given. If the bowels have to be moved very often by artificial means, it is best to use occasionally an injection of warm water to obviate the necessity of giving a purgative too frequently. An occasional warm-water bath, followed by gentle friction over the stomach and bowels with the warm hand, will be beneficial.

If the child is cutting its teeth, and if the gums are tender and swollen, they must be freely lanced, in order to relieve the irritation of the nervous system produced by the congested gum.

As any sudden excitement may cause a paroxysm of the disease, it is important that all sources of annoyance be excluded from the sick-room, so that the child may rest quietly and without disturbance. While the room must be well ventilated, no draught of air should be permitted to pass over the child's body, as the impression of sudden cold on the surface may be sufficient to produce a convulsive seizure. During the paroxysm but little can be done to mitigate the severity of the attack. A little spirits may be sprinkled on the face and chest, and the feet placed in warm water, with, perhaps, some hope of abbreviating the duration of the paroxysm.

The treatment of this disease by medicine should be undertaken only by a physician having a good knowledge of his profession.

CEREBRO-SPINAL MENINGITIS, OR SPOTTED FEVER.

This is an epidemic disease and is caused by inflammation of the membranes of the brain and the spinal cord.

The disease usually begins suddenly, the person being in apparent good health until seized with one or more symptoms of the malady. In other cases the patient, if old enough, may complain of wandering pains and other manifestations of impaired health before spinal meningitis is suspected. Usually the first marked symptoms are headache and vomiting, followed by a severe rigor, or "shake," if the patient be an adult. If the attack occurs in a young child the headache and vomiting may be followed by a convulsion instead of a rigor. After the fit the child is usually dull, stupid and restless, while the moaning and crying, with frequent carrying of the hand to the head, indicate that it is suffering with headache. The pupils are sometimes dilated, at others contracted. The bowels are usually constipated. The pulse is quick and often irregular. The surface of the

body is extremely sensitive, the slightest pressure sometimes causing the patient to moan or scream.

Retraction of the head upon the shoulders is the most marked symptom of cerebro-spinal meningitis, and usually occurs soon after the patient is attacked with the disease. Not only is the head drawn back upon the shoulder, but in some severe cases the muscles all along the spine are violently contracted, thus bending the whole body backward. Sometimes the jaws are rigidly closed, and this condition of lock-jaw may continue until death. The muscles engaged in the act of swallowing may become paralyzed almost at the commencement of the disease, rendering it impossible to take food or medicine in the natural way.

When the disease is at its height the child lies on its side with its head retracted, its body bent backward, and its limbs fixed. In fatal cases the symptoms usually continue without abatement, consciousness is lost, the cries and other manifestations of pain cease, and the child falls into a stupor from which it cannot be aroused. Occasionally, a few days before death, the patient seems to be much better and brighter. Consciousness may, to some extent, return, but only for a short time. This seeming improvement is calculated to deceive the parents, and even the physician may be misled by it. Attention in such cases should be paid to the condition of the pupils. In temporary improvement they will be found either abnormally contracted or dilated, and the stimulus of light will have but little, if any, effect upon them; on the other hand, if the improvement is permanent the pupils will usually respond to the action of light.

Different epidemics of cerebro-spinal meningitis differ in their fatality. During the prevalence of some, a majority of persons attacked succumb to the disease, while in others the mortality is not so great—a vast majority of cases recovering. Cases occurring at the beginning of an epidemic are

usually more fatal than those happening at a later stage. At first the disease may assume the fulminating form, overwhelming the patient within a few hours after the first symptoms are noticed. As the epidemic progresses, however, the specific poison seems to become attenuated, and the disease usually assumes a much milder form.

Sometimes, though not often, an eruption appears upon the skin, and on account of its presence the disease has been called "spotted fever." The rash consists of dark purple spots, or blotches, due to extravasation of blood under the skin. They are usually found on the legs, hands, face, back and neck, and in size they may range from a pin's head to a walnut; generally, however, they are about as large as a five-cent piece.

Paralysis may, during the course of the disease, affect the muscles of the throat to such an extent as to render swallowing impossible, or one or both of the lower limbs may be implicated. This form of paralysis seems to be incurable, no remedy having any effect upon it.

The duration of the disease is variable. In its most malignant form death may take place within a few hours from the beginning of the attack. Other cases are more protracted, lasting five or six weeks, and ending either in death or in recovery. Convalescence is always slow, the resulting debility continuing a long time.

The treatment of cerebro-spinal meningitis is very unsatisfactory. Different writers have recommended remedies of the most opposite character. The fact is that many cases will die, no matter what treatment is adopted, while others will recover with but little medication, if properly nursed and judiciously fed. In the very beginning, if no physician is present, the mother may, if the child's bowels are constipated, give a dose of purgative medicine, such as castor oil or syrup of rhubarb. If the child has excessive head-

ache, and especially if it is threatened with convulsions, a hot-water bath should be given at once. This may be repeated occasionally, if required, until a physician can be procured to take charge of the case. The patient should be kept in a room that is dark and well ventilated.

hiccough, or hiccup.

This troublesome and annoying affection may occur in both children and adults. Any irritation of the phrenic nerve at its origin, along its course, or at its terminal branches, which are situated on the under side of the diaphragm, may produce hiccough. Undue distention of the stomach by being overfilled with food or drink, or by an accumulation of wind due to faulty digestion, is the most common cause of hiccough. In some persons the introduction into the stomach of hot, peppery foods may give rise to the affection.

Hiccough is occasionally a troublesome symptom during convalescence in cholera, and is attended with eructations of wind and sometimes with vomiting.

Persistent hiccough occurring during the course of typhoid fever is often an indication of perforation of the bowels and the onset of general peritonitis, being in such cases a fatal symptom.

The treatment of hiccough will depend upon the cause that produces the disease. Thus, if it proceeds from over-distention of the stomach, a mild emetic will often give relief. Taking a full breath and distending the lungs for a few moments seems to produce such an impression upon the diaphragm as to cause a suspension of the hiccough in some cases.

The application of hot cloths over the stomach will occasionally be useful.

In cases of nervous origin, in children, relief is sometimes obtained by diverting the patient's attention from his trou-

ble, and telling him of some thrilling or startling occurrence.

A glass of water, swallowed as hot as can be borne, will occasionally arrest a paroxysm of hiccough.

The medicines used in the treatment of severe cases are dangerous unless given in suitable doses and at proper intervals; hence, when the above-mentioned measures fail to give relief, and the trouble continues to such an extent as to disturb the patient's rest, a physician should be summoned.

NIGHT TERRORS.

A child in otherwise seemingly good health may suffer from night terrors. Soon after going to sleep it wakes up suddenly, frightened and terrified. It screams violently and declares that it has seen a ghost, or some other frightful object, on or near its bed. The child is the picture of terror and alarm; the perspiration streams down its face, and it may be from fifteen to thirty minutes before it becomes pacified. Sometimes it is attacked with a fit of weeping, and sobs itself to sleep in its mother's arms. It usually has but one attack during a night, but occasionally it may wake several times with the terrors. The trouble is apt to recur night after night for an indefinite period.

Night terrors seem to be a species of nightmare, and are apt to occur at the time when a child is cutting its permanent teeth. They do not indicate disease of the brain; but are associated with some derangement of the digestive organs, such as indigestion or dyspepsia. In such cases the child is badly nourished; has irregular bowels, and its stools usually contain large quantities of mucus.

Although the malady is not caused by brain disease, yet every effort should be made to restore the child to a healthy condition, as a frequent and long-continued repetition of the terrors, and the excitement produced by them, may at length produce serious disease of the nervous centres.

In the treatment of these cases it is important that the child's surroundings be pleasant, and that nothing shall occur to worry or fret, and especially to alarm it. It must not be talked to about ghosts, mad dogs, and such horrifying things.

Its surroundings during the day should be as pleasant as possible, so that its thoughts will not be centred on objects of terror and alarm when it retires at night. A light should be left in its room during the night, and it is best that an older person should occupy a bed in the same room. Warm baths, before retiring, will be soothing to its nervous system and tend to induce sleep.

The diet should consist of such articles as are nourishing and easily digested. Potatoes, puddings, cakes, and all kinds of sweets, must be excluded. Two hours after each meal the child should take six or eight grains of bicarbonate of soda (common baking soda) in a teaspoonful of water.

The evening meal should be taken early—say three or four hours before retiring. An occasional dose of laxative medicine, such as syrup of rhubarb, or calcined magnesia, will be beneficial.

CHAPTER XVII.

Constitutional Diseases.

CONSUMPTION.

IN most cases of consumption in children the disease is inherited. Occasionally, however, it is acquired in early childhood, owing to bad hygienic surroundings and improper nourishment. It is also probable that consumption is produced by the reception into the system of the peculiar bacillus, or microbe, that is supposed to cause the disease in those who would not otherwise suffer from it. Whether the presence of this bacillus is the principal cause of consumption is questionable; but it is nevertheless certain that in nearly all cases it is present in some of the affected tissues. Besides, it is found in the matters expectorated by consumptive patients. When the expectoration is deposited on carpets or other articles and left to dry, the germ that produces the disease will soon be found floating in the air of the room, whence it is inspired by others, with the possible effect of inoculating them with the virus.

While active exercise—within reasonable limits—and plenty of pure fresh air, with good nutritious food, constitute the principal safeguards against consumption, the infectious character of the disease must not be overlooked, and hence those children that are born of consumptive parents must be removed as far as possible from contact with tuberculous persons. That a husband may contract the dis-

ease from a consumptive wife, or that a healthy wife may fall a victim to tuberculosis from her intimate association with a consumptive husband, are facts that come within the observation of many persons. This being the case, a moment's thought will convince any one of the necessity of placing a child in the care of a nurse that is entirely free of tubercular disease. If the mother is consumptive the child must be cared for by a healthy nurse; and where other members of the family are suffering from the disease the child should, in a measure, be isolated from them—at least they should not be permitted to nurse, kiss, or handle it to any extent, nor should they blow their breath on its food to cool it, nor sleep in the same room with it.

As matters expectorated by consumptive patients contain the germs that produce consumption, and are therefore infectious, they should be destroyed without delay. This can easily be done by having the patient deposit the expectorations upon small bits of paper, after which they should be thrown into the fire. No consumptive should allow his expectorated matter to be deposited on the floor, or bedclothes, or other article, where it will remain long in the room.

Occasionally it happens that a mother far gone with consumption becomes pregnant, and during the time of her pregnancy the lung disease seems to be suspended, her health becoming greatly improved after conception. At the end of her term she gives birth to a child that is plump, well nourished, and looking healthy. The temporary arrest of the disease in the mother has had a salutary effect upon the child, and it comes into the world seemingly with a fair chance of permanent good health. Under such circumstances the mother must not permit the child to nurse her breasts, for such a course would not only hasten her own death, but, being confined to the milk of a consumptive mother, the child would most likely die before completing the

process of teething, or, if it should safely pass that dangerous period, it would continue to be a weak, badly-nourished being, of low vitality, and incapable of withstanding fatigue and exposure.

In grown persons the tubercular deposit nearly always begins in the lungs, and when it exists in other organs it is as a secondary deposit—an extension, as it were, of the lung disease. In childhood the deposit may occur in various tissues of the body, such as the lungs, the bronchial glands, mesenteric glands, the intestines, the brain, and various other structures.

The symptoms of consumption in childhood differ to a considerable extent from those observed in adult life. Thus, in childhood, bleeding from the lungs is not common; the cough is comparatively slight; the expectoration is not very profuse, and the exhausting night-sweats are rarely present. For some weeks before the cough excites apprehension that the lungs are affected, the child complains of pains in its chest and abdomen; it loses its appetite, and its strength and flesh gradually fail. It is listless and fretful in day-time, and as night approaches the skin becomes dry and hot, and the lips parched, showing an accession of fever. The cough, although it may be frequent, is slight, short and dry. These symptoms may all be present in other diseases; but when they occur in a child born of consumptive parents they are always a matter of alarm, especially if the patient loses flesh and strength, and has a temperature constantly above the normal standard.

If bronchitis supervenes, which is likely to happen, the symptoms become aggravated; the respiration is quick and accompanied with wheezing; the cough is more frequent and lasts longer; mucus is secreted in large quantities, and is coughed up or swallowed. Sweating, if present, instead of being profuse and exhaustive, is generally limited to the

face and head. In some cases, diarrhœa, attended with great wasting of the body, occurs, and a deposit resembling thrush is seen inside of the mouth. If the tubercles are deposited in the bronchial glands, the breathing becomes more difficult, because of the pressure made by the enlarged glands upon the air-tubes. In such cases the wheezing is increased and the face is puffed and swollen.

In the treatment of children born of consumptive parents, as well as others in whom there is a tendency to the disease, efforts must from the first be made to surround them with the best sanitary conditions possible.

Unhealthy mothers must not suckle their children, but the best substitute for her milk must be employed. If cow's milk is used it must be drawn from a healthy animal; or if it is impossible to secure milk from an animal known to be healthy, it should be boiled for five minutes before it is given to the infant. To feed a young child milk from a tuberculous cow would only aid in the production of the disease. As the child grows older other articles can be added to its diet. After the first few months one of the "infant foods" can be given with advantage; and after the completion of the first year tender meats, eggs, and vegetables in their season, will constitute important additions to the child's dietary.

Articles containing an excess of sugar and starch should be excluded, for the reason that they are apt to produce an acid condition of the stomach and bowels, greatly interfering with digestion and assimilation. To give sweetmeats instead of meat, eggs and milk, is to substitute food containing very little nourishment for that which tends to give tone and vigor to a system already weakened by disease. Furthermore, the excessive secretion of acid that attends the ingestion of sweets, impairs the appetite and renders it impossible to give a sufficient quantity of more nourishing

food. If the appetite becomes poor, and the child is not inclined to take a sufficient amount of nourishment, it may be allowed a little wine at meal-time, diluted with equal parts of water. The precise kind of food best adapted to each case can be determined only by actual trial cautiously made.

The clothing should be kept light and warm, and the child should be taken out-doors quite often, if the weather is fair.

Salt-water bathing is of great value in the management of consumptive children. While the child is young, it will be sufficient to wet a large sponge with the salt water at a temperature a little below that of the body, and to apply it to the whole surface. With a soft cloth the child should be carefully dried, and the body rubbed with the hand until the skin is aglow. This operation can be completed in two or three minutes, and should be performed every morning. As the child becomes older it can take a regular salt-water bath for a few minutes, and afterwards rub itself perfectly dry with a coarse cloth or towel, which should be firmly and briskly applied to the skin.

Children who are threatened with consumption should not be kept too close at their studies. The ordinary school-room, with its bad ventilation and changeable temperature, is not a suitable place for a delicate child. Besides, such rooms are usually crowded with children, some of whom may be the subjects of disease of an infectious character, and the constant breathing of the vitiated atmosphere of the room is dangerous even to the strong, and often fatal to the weak.

The rooms of a consumptive patient must be thoroughly aired during the day-time. To keep them closed night and day is to imperil the health not only of the patient, but also of other members of the household.

If possible, the parents should take the child to a climate suitable for the residence of a consumptive person. Children who, in many localities, would die of consumption in

early life, may live to old age in a mild, dry climate with an even temperature, and free from malaria and other poisonous and depressing agencies. If the parents reside in a low, wet place, with ponds or marshes near, and if it is impossible to change their residence to a more genial climate, much good can be accomplished by selecting an elevated location near by. By moving their residence to a higher locality they will escape the evil influence of malarial poisoning, and secure for themselves and their children better air and more desirable hygienic surroundings.

The choice of an occupation for the child to follow in after-life is a most important matter. In making such a selection, the principal aim should be to choose a vocation that will lead to plenty of out-door exercise. A moderate amount of daily physical exertion is necessary, but hard and exhaustive manual labor must be avoided. The strength of the muscles should be increased by daily use, but exhaustion from hard work must be guarded against. Exercise, without putting too much strain on any of the vital organs, and not carried to the point of fatigue, should be the guide under such circumstances. Sedentary occupations and confinement to in-door positions, such as book-keeping, clerking, etc., are not suitable to those who are tainted with consumptive or scrofulous disease.

SCROFULA.

Scrofula, in a child, is usually hereditary, but it may be acquired by the constant action of causes that depress the general health. The offspring of very old persons are more apt to be scrofulous than those who are born of parents that are in the enjoyment of the health and vitality that belong to early and middle life.

That a close kinship exists between scrofula and consumption is shown by the fact that scrofulous children are often

the issue of consumptive parents, while consumptive children are not infrequently the offspring of those who suffer from scrofula.

The peculiar bacillus, or minute organism, that produces consumption, or at least that is found in the tuberculous matter of consumptive persons, is also sometimes, but not always, present in scrofulous textures.

But even if the causation be nearly identical, the symptoms attending the two diseases are quite dissimilar. Thus, while consumption, in a vast majority of cases expends its force on the lungs, scrofula affects the lymphatic glands, the skin, bones, joints, eyes, and mucous membranes.

Inflammation of a gland in a sound child runs a different course from that which it pursues in a scrofulous one. In the former, if properly treated, it will often end in resolution or cure, without the formation of matter, and when suppuration does take place the matter will be discovered in a comparatively short time. In the scrofulous patient, however, the gland will continue in an inflamed condition for a long time, being hard, greatly swollen, and perhaps nodulated, with but little tendency either to the formation of matter, or to cure by resolution. In fact, it continues in pretty much the same condition for a long time. When matter forms in such glands it is always slow in its development, and when it finds an exit, either by lancing or by ulcerating through the skin, the abscess is hard to heal and continues to secrete thin, unhealthy matter for a long time.

Scrofulous inflammation of the eyes is stubborn, protracted and difficult of cure. Specks, or opacities, appear upon the front of the eye-ball, which may seriously interfere with sight. Intolerance of light is a marked symptom, it being almost impossible to separate the eye-lids unless the room be darkened. Scrofula frequently manifests itself in inflammation of the eye-lids. This form of the disease is

apt to follow an attack of measles in a scrofulous child, and is a most troublesome and long-continued affection. The eye-lashes become involved, some of them falling out, while others are turned in upon the eye-ball, keeping it constantly irritated. The disease may last for a life-time, at times giving rise to but little inconvenience, while under the influence of an exciting cause it may recur with all its former violence.

Diseases of the bones constitute one of the gravest manifestations of the scrofulous taint. Various kinds of curvatures of the spine, hip-joint disease, and abscesses of bones in other portions of the body, arise from causes that in healthy individuals would lead to no such dreadful results.

The skin of scrofulous children is often the seat of ulcers and sores that are hard to heal, being but little benefited by remedies that in the healthy would soon accomplish a cure. The mucous membrane of the throat and nose is frequently the seat of the scrofulous affection. The disease becomes chronic, and is attended with the secretion of a sticky, stringy matter that runs from the child's nose, and by its abundant quantity interferes with natural breathing.

Irritation of the stomach and bowels, with vomiting and diarrhœa, the result of exposure to cold, is attended with fever in children who have scrofula, while in the healthy the same amount of derangement of the digestive organs would not produce any febrile action

Very young children are, in a measure, exempt from attacks of scrofula; but after the second year it becomes somewhat common, and from that age until the child is fourteen or fifteen years old, the disease is very active.

Acquired scrofula, or that form of the disease not depending upon heredity, may arise from causes that interfere with the healthy development of the system during the first

years of childhood. Improper nourishment in early life may have much to do in developing the disease. If the mother's system is tainted, her milk will contribute to the impairment of the infant's health. The germs contained in milk from tuberculous cows may also aid in producing scrofula. Exposure to an atmosphere vitiated by the products of decomposition in unclean houses, may be a potent factor in causing the disease.

The treatment consists mainly in doing everything possible to build up the child's system and to increase its strength, thus enabling it to resist those influences that are potent in the production of scrofula. The general measures adapted to this purpose have been given in the article on consumption, to which the reader is referred.

Medicines have but little effect in the prevention or cure of scrofula. When indicated it is because of some complication that is either present or prospective, and, of course, under such circumstances, no one but a physician should prescribe them.

If the mother is healthy, and her milk agrees with the infant, weaning can be somewhat deferred, and the child should be given a mixed diet before it is taken from the breast. As it grows older its diet should be varied and not confined to a few articles of food only. But while such articles should form the basis of the child's diet, indulgence must be permitted in others, so that it will not become tired of the food upon which we place the most reliance. While milk, eggs and good beef will constitute the principal items that enter into its dietary, as it advances in age different kinds of vegetables that suit its appetite and are easily digested should be allowed in moderation. Good fresh bread to suit its taste may be given in such quantities as it may desire; but if bread made from corn meal be relished by the child, it should be preferred to wheat bread for the dinner meal, while for

supper oat-meal mush will be an excellent addition to the bill of fare.

Salt-water sponge baths are beneficial, and should be used in early life a little warmer than the temperature of the room. As the child becomes older the water need not be so warm.

Enlargement of the glands of the neck, so often met with in scrofulous children, requires but little treatment by the mother. The tincture of iodine is often painted on the skin covering the gland, but it is doubtful whether it answers any useful purpose. If the glands are painfully swollen some relief may be given by frequent applications of warm sweet oil, which can be gently rubbed into the skin with the hand.

Scrofulous inflammation of the eyes should be treated by a competent ophthalmic surgeon. The mother should see that the child's eyes are not exposed to the rays of light, and that they are kept clean by frequently bathing them in warm water.

In scrofulous affections of the nose and throat, the parts must be kept as free as possible from acrid secretions by the use of warm-water gargles to the throat, and the application of a wash of alcohol and water to the nose by means of a camel's-hair brush.

Sores, ulcers and eruptions upon the skin should be frequently bathed to keep them clean, and to remove the foul secretions to which they give rise.

Cases of spinal curvature, hip-joint disease, and all affections of the bones must be placed in charge of a skillful surgeon as soon as they are suspected. Time in such cases is all-important; the delay of a few days may cost the sufferer the use of a limb, and possibly life itself may be compromised. In these cases the mother's attention should be given to the prevention of injuries to the child by falls or other accidents.

RICKETS.

Rickets is a disease of early childhood, beginning, usually, between the fourth month and the second year. Children affected with the disease are usually the offspring of scrofulous parents; but cases may occur where there is no hereditary taint in the family.

Rickets consists essentially of a change in the constituents of the bones; the hard or cancellated structure being partly removed, while the softer portion largely predominates. This explains why the bones, having lost the mineral matter which gives them hardness, become so soft and are so easily bent by any pressure that is exerted upon them. Although all the bones are affected in this disease, it is obvious that those which are subjected to strong muscular action, or have to sustain considerable weight, will suffer most. We therefore find the spine, the pelvis, and the lower limbs most prominently distorted. The spine may be bent forward, causing hump-back, or it may bend towards the side, constituting lateral curvature. The lower limbs are crooked, usually caused by an increase of their natural curves; or they may be bent in a variety of shapes. Arrest of growth in the limbs is marked, giving the child a dwarfish appearance. The ribs follow the distortion of the spine, and owing to their change of position and the bending forward of the breast bone, a sharp prominence of the chest is produced. The abdomen is usually prominent; the stature is stunted, dwarfish and unseemly. The head may be below the normal size, yet, because of the deficiency in the size of the bones of the face, it may have the appearance of being unnaturally large. The features are marked; the general expression of the face is displeasing and of a character peculiar to this disease.

It may be impossible to detect rickets in its very earliest stages. The first symptoms are connected with the organs

of digestion, and may be present during the course of many chronic diseases. The discharges from the bowels are light in color, due to an absence of bile, and are offensive to the smell. The appetite may be absent, or capricious, and vomiting may occasionally occur. The child grows dull, is peevish, and there is wasting of the body.

The deformity produced by rickets is often first discovered when the child attempts to walk. The knees approach each other closely, while the ankles are widely separated; the shins curve forwards over the ankles. The deformity is altogether different from the bow-leg or bandy-leg curve that may happen in perfectly healthy children. After the lower limbs begin to bend out of shape, the spinal column soon yields to the pressure upon it, and a curvature is quickly established. After this the other bones become affected, showing that the disease, so far as the bone affection is concerned, is general in character. The number of bones involved serves to distinguish the spinal curvature produced by rickets from curvatures occurring in those who are free from constitutional diseases.

Curvatures of the spine, not due to rickets, are usually seen in young persons after the tenth or twelfth year, while rickety curvatures take place in the very young. Non-rickety spinal curvature is usually met with in the well-to-do young female, and is not accompanied by deformity of the pelvis, or lower limbs; rickety curvature, on the other hand, happens in the poor and badly-nourished child, and is attended with such deformities, and also with a seeming enlargement of the head.

A child suffering from rickets may succumb to some of the various complications that are liable to supervene during the progress of the disease, such as bronchitis, pneumonia, or water on the brain, ending in convulsions, or to disease of the lymphatic glands, producing irremediable changes in

the blood. Protracted diarrhœa with ulceration of the glands of the bowels may also exhaust the rickety patient and produce a fatal result.

Ordinarily rickets is essentially a chronic disease and lasts for months or years, the deformity being permanent. As the patient advances in age the disease does not become more marked; but at or about puberty, sometimes before, the proportion of earthy matters is restored to the bones, the general health improves, the flesh and color become good, while digestion and assimilation approach a normal standard. In favorable cases, much of the deformity may have been overcome by proper treatment; but it usually happens that, although the patient has regained his general health, he remains a permanent misshapen dwarf.

Treatment.—As rickets is usually caused by defective nutrition, and a lack of good wholesome food, it is of the first importance in its management to provide the patient with nutritious diet, pure air, warm clothing and frequent baths. If the mother's milk is rich and agrees with the child, it is the best article of diet; but if it is very poor in quality, or if it disagrees with the child's stomach and bowels, the condensed milk, or some of the infant foods, should be substituted. In this connection the article on feeding can be consulted with advantage.

As the child grows older a little beef-broth with bread can be given. After the eighth month, eggs, beef twice a day, and strong soup, in small quantities, should be allowed. If no ordinary article of diet agrees with the child, or if it continues to emaciate, it should, if over eighteen months old, be given raw beef. The beef must be lean and tender, free from fat and gristle, and should be cut into very fine particles, and then rubbed through a colender. It should then be well seasoned with salt and rolled into little balls, and fed in small quantities. As animal matter is deficient in

the bones of rickety patients, the raw beef as a diet is peculiarly adapted to the needs of such persons. Of course, if the raw meat disagrees it must be discontinued.

Cod-liver oil is of great value in the treatment of children who suffer from rickets. It should be combined with equal parts of syrup of phosphate of iron and lime water. These three articles can be mixed in equal quantities, and, after being well shaken, a teaspoonful may be given to the child three times a day. If this mixture is well borne it can be continued for a long time, but if it disagrees with the stomach and bowels to any great extent, it should be withdrawn, and dependence must be placed on such nourishing food as agrees well with the child.

The patient must be taken into the out-door air each day during pleasant weather; but it should not be carried in the nurse's arms, as by doing so the tendency to deformity might be increased. A small child can be taken out-doors in a basket provided with a soft but firm pad for it to lie on. When older, it can be placed in a hand-carriage provided with a soft bed.

The regular sleep should be taken on a soft mattress, and not on a feather-bed. High pillows must be avoided, as tending to increase deformities. In short, the child should lie in such manner as will not cause the body to bend in an unnatural curvature at any one point. It should not be made to stand on its feet, or even allowed to sit upright, as such positions tend to the formation of curvatures by the super-imposed weight upon the soft and yielding bones. Daily bathing the child with salt water, followed by gentle rubbing of the body, is of value in giving tone and strength to the system.

The patient must be warmly clad, flannel being worn both winter and summer. Instead of changing the clothing from woollen to cotton goods as the warm weather approaches, it

is better to change from a thick to a thin article of flannel. In winter the flannel should be of some thickness, so as to insure sufficient warmth to the body, while in warm weather it should be of the lightest possible texture.

The rectification of deformities occasioned by rickets belongs to the domain of surgery, and need not be treated of in these pages.

CHAPTER XVIII.

Eruptive Diseases.

VARIOUS kinds of eruptions appear upon the skin of children, some of which are quite difficult to cure; while others, though of short duration, give rise to pain and considerable inconvenience.

Prickly heat is usually caused by keeping the child so warmly clad as to produce excessive perspiration. The eruption consists of minute vesicles, the size of a pin-head, filled with clear water and situated mostly on the breast and other parts of the body.

In the treatment of this disease attention must be paid to the clothing, which should be sufficient to protect the child from cold, but not so warm as to cause excessive sweating. The affected parts should be sponged with a mixture of vinegar and water, after which they can be dusted with a powder consisting of oxide of zinc and starch in equal portions.

Itch is a contagious disease, and children take it not only from nurses and other persons with whom they come in contact, but also from cats and other domestic animals. The eruption is usually seated on the inside of the thighs, the wrists, hands and feet, and between the fingers and toes. It is caused by a parasite which deposits its eggs under the skin, where they hatch out, leaving the insect to burrow into the tissues.

The indications for treatment are: first, to destroy the insect and the eggs; and, second, to remove the symptoms produced by scratching the skin.

The child must first be washed with soap and water, after which it should remain in a hot-water bath for several minutes. The whole body, except the head, should then be rubbed with sulphur ointment, made by thoroughly mixing one tablespoonful of powdered sulphur with four tablespoonfuls of fresh lard. One application of the ointment, if thoroughly made, is usually sufficient to destroy the parasite; but, if necessary, another can be made as soon as it has been ascertained that the first is ineffective.

If there is much irritation of the skin left after the parasite has been destroyed, the oxide of zinc ointment, with a little powdered camphor added, will usually allay it in a short time.

The child's clothing must be thoroughly disinfected. Such articles as cannot be boiled and washed must be subjected to a high degree of heat by passing very hot irons over all parts of them. If this precaution be neglected the disease may last for an indefinite period.

Nettle rash consists of rounded or oval elevations, or wheals, which are red at the margin and pale in the centre. The eruption is characterized by itching, burning or stinging sensations, which may be so severe as to give the patient no rest, causing him to rub the parts, with no other effect than to add to his suffering. The eruption is most common on the chest and back, though other parts of the body may be affected.

The disease may disappear in a few days, or it may last for a long time. Some persons seem to be peculiarly liable to suffer from it.

Treatment.—As nettle rash seems, in some cases, to be caused by disorder of the digestive organs, it is important

in its treatment to pay strict attention to the diet, avoiding all indigestible or stimulating food. If the patient has, just before his attack, partaken of a full meal of rich food which has not been digested, it may be well to give him a mild emetic, such as powdered ipecac, for the purpose of getting rid of the contents of the stomach.

In nearly all cases a simple laxative, such as syrup of rhubarb or castor oil, will be beneficial.

To remove the intense itching, various remedies have been tried. Sponging with vinegar and water is useful. Relief is often obtained by bathing with a mixture consisting of a heaping tablespoonful of baking soda dissolved in a pint of water. This should be applied quite warm to the skin with a sponge. Sometimes the oxide of zinc ointment rubbed upon the affected parts gives considerable comfort.

Dandruff, or scurf on the head, is sometimes quite troublesome in young children. Little white scales form on the scalp in great abundance and produce considerable itching, and when they are removed another crop is speedily produced.

Treatment.—The head must be kept clean by washing it night and morning with warm rain-water, to which a little alcohol has been added. Warm vinegar may then be applied, after which pure olive oil should be rubbed on the scalp. If this does not prove efficacious, an egg, well beaten, may be rubbed into the hair and afterwards washed out with warm water, when the oil should again be applied. If the head is combed, it must be done in the gentlest manner possible, so as not to irritate the scalp.

Red Gum.—This is an eruption occurring in young infants, usually before the sixth week, and is of trifling importance. It consists of pimples of a bright red color, situated most commonly on the cheeks and forehead. It is usually connected with acidity of the stomach and a slight disturb-

ance of the bowels. Nothing in the way of medicine is needed unless it be small doses of carbonate of magnesia (lump magnesia) to correct the acidity of the stomach.

RINGWORM—HERPES CIRCINATUS.

Ringworm may show itself on almost any part of the body; but the scalp is the seat of the most troublesome as well as the most common form of the disease. When thus situated it is known as *scald-head.* It commences in the form of minute, red, slightly elevated, round spots, which increase in size and become scaly. At first the eruption is limited to the surface of the scalp; but as it advances it becomes more deeply seated, involving the hairs, which become dry, twisted, and are easily extracted, and being very brittle, they break off just above the scalp. The affected surface may be round, but often it is irregular in shape. When the parts are highly inflamed, they are raised above the sound scalp, and have openings from which exudes a thick, honey-like discharge that masses the surrounding hairs together. In other cases pustules are formed, containing matter that dries into crusts, causing the disease to resemble milk crust.

Treatment.—In treating ringworm of the head, all dressings, brushes, combs, etc., that come in contact with the sore should be destroyed. The effect of applying such articles to the head a second time, while the sore is healing, would be to re-inoculate the parts and thereby delay the cure.

Numerous remedies have been used in the treatment of scald head, but they all give so much pain, and require to be used with so much caution, that no mother should undertake the cure of a severe case, but should at once submit her child to competent medical treatment. Cleanliness of the parts must be enforced throughout the treatment, and frequent washings with rain water and carbolic soap will be necessary.

When it is impossible to procure medical advice, the mother can, to a great degree, relieve the child, and possibly cure the disease by adopting the following plan: The hair being closely clipped so as to permit the medicines to come in contact with the diseased scalp, the sore should be washed with carbolic soap and warm rain-water. It may then be thoroughly wet with a wash made by dissolving twenty drops of carbolic acid in a tablespoonful of glycerine, to which three tablespoonfuls of alcohol and a half pint of water have been added. Ordinarily this wash should be permitted to dry on the surface; but if it produces too much burning a little warm water will soon remove it.

The oxide of zinc mixed with glycerine to the consistency of a thick paste can then be applied. These applications can be made two or three times a day.

If crusts form on the sore, the frequent use of an ointment composed of vaseline, to which a little calomel has been added, will be of great benefit.

Ringworm appearing in small patches on different parts of the body can generally be cured by painting them with tincture of iodine. If the parts become raw after this application, they may be dressed with oxide of zinc ointment.

SHINGLES—HERPES ZOSTER.

This disease consists of a vesicular eruption that appears upon the body—usually on the side of the waist, or the chest, or on the shoulder. Beginning near the spine, the eruption extends around the waist in an oblique direction. Sometimes the disease begins on one of the shoulders, whence it may extend in an oblique direction towards the breast.

Occasionally the eruption is limited to patches of vesicles situated on the shoulder, the side, or front part of the chest. In rare cases both sides of the chest are affected, but when

such is the case there will be an intervening space of healthy skin, as the disease never entirely encircles the body.

The eruption appears at first as small, red spots, which soon assume the form of vesicles or blisters that are filled with a clear, watery fluid. These vesicles enlarge, and may reach the size of a pea, their contents gradually becoming thick and opaque.

Sometimes the vesicles are joined together, forming blisters, varying in size and of irregular shape. As the disease declines, the vesicles dry up into thin crusts, which soon fall off, leaving the new skin beneath of a pinkish color.

In mild cases there is but little, if any, fever, the eruption itself being the only manifestation of the disease. Occasionally, however, there is considerable fever, coupled often with sharp neuralgic pains in the affected parts.

The eruption is attended with a burning and tingling sensation that, in severe cases, may be sufficient to prevent sleep.

Treatment.—The diet must be light, and partaken of in small quantities. If constipation exists it should be overcome by moderate doses of Epsom salts.

The affected parts should be bathed with a solution of sugar of lead—a teaspoonful of the lead to a pint of water—and afterwards dusted with a powder composed of precipitated carbonate of zinc, to which one-twentieth of its weight of powdered camphor has been added. The camphor can be reduced to a fine powder before mixing it with the zinc by pouring over it a few drops of alcohol, after which it can easily be pulverized.

If the parts become raw and inflamed it will be best to dress them with the oxide of zinc ointment.

The affected parts should be protected from the rubbing of coarse or irritating clothing, and for this purpose a piece of soft canton-flannel can be sewed to the inner surface of the undergarment.

FEVER-BLISTERS—HERPES LABIALIS.

This is a somewhat painful and troublesome affection. Occasionally the eruption extends around the whole mouth; but usually it is confined to one of the lips at or near the angles of the mouth. Patches of the eruption are often situated on the skin, either above or below the lips, and near the entrance to the nostrils.

The vesicles are small, and at first contain a clear, watery fluid, which soon becomes turbid, changing to matter in three or four days.

Rupture of the vesicles is followed by the formation of crusts, which soon fall off, leaving the surface below red, harsh and painful.

Fever-blisters are often the sequence of febrile attacks of a mild character. Severe colds, when attended with fever, are not infrequently followed by fever-blisters.

Treatment.—In most cases the application of dilute alcohol—two parts of water to one of alcohol—four or five times a day will be found beneficial, both in relieving the burning sensation and curing the eruption. After each application of the alcohol, the parts should be anointed with vaseline, to which a small portion of camphor has been added.

Occasionally the disease proves quite stubborn, yielding but slowly to the influence of medicines. In such cases, in addition to the use of the above remedies, it may be necessary to apply once a day a wash composed of from twenty to thirty drops of muriatic acid and two tablespoonfuls of water. The wash should contain enough of the acid to produce a slight stinging sensation. Each time the acid wash is used it should be followed by the camphorated vaseline.

ECZEMA.

Eczema, in some of its forms, is the most common of all skin diseases, and may be divided into two varieties: the

simple and the *red*. The disease may be either *acute* or *chronic*, the chronic being the form usually met with in children.

Simple eczema usually attacks the hands and arms, and is not attended with much fever or other constitutional symptoms. At first, small vesicles, not larger than the head of a pin, containing a clear fluid, are seen on the skin. In the course of forty-eight hours the fluid in the vesicles becomes cloudy, and in three or four days it dries up, leaving a fine mealy exfoliation of the skin. This process may be repeated several times, causing the disease to last for many weeks; when, instead of the ordinary exfoliation, the skin will be the seat of crusts or scabs, from between and under which a watery discharge will flow. The itching is troublesome, and if the parts be scratched, or greatly irritated, the disease may become chronic or else assume the form of red eczema.

Red Eczema.—This is an inflammatory disease, generally commencing with a distinct fever, and attended with pain, heat and swelling. At first, numerous clear small vesicles are developed in an irregular manner in patches over a highly inflamed surface of a bright red color. The vesicles soon become cloudy, enlarge, and, bursting, form yellow crusts. In rare cases the disease may terminate in two or three weeks, the crusts falling off and the skin exfoliating. But usually a thin serous fluid continues to exude from the inflamed surface, and this discharge flowing over other portions of the skin spreads the inflammation. Bright red cracks and fissures form in the integuments, which are swollen and attended with pain and itching. Blood flows from the parts when scratched. If the discharge is scanty it soon dries, forming scales, which can easily be detached, to be followed by others. The disease, after being fully established, is very intractable and difficult to cure. Some

cases recover in a few weeks or months, while others may last for years.

In chronic eczema, the disease loses its vesicular character; the swollen integuments thicken, and are elevated above the surrounding unaffected skin. The diseased surface assumes a dark hue, with numerous deep fissures that pour out a bloody discharge. The itching continues severe, and if the parts be rubbed, or otherwise irritated, they become inflamed.

After awhile the child's general health is affected; the digestive organs are deranged, and the patient suffers from general debility.

The most important and most frequent forms of this disease, as it appears in children, is eczema of the face and eczema of the head.

Eczema of the face usually begins on the forehead or cheeks, and may be limited to those localities, or it may spread to the surrounding parts, as the chin, ears and neck. When the disease is mild, the eruption leaves delicate scales or thin crusts after the vesicles break. In severe cases the crusts are thicker, more numerous, and when detached from the surface, leave the skin beneath red, inflamed and swollen. The parts are wet with a sero-purulent discharge, sometimes mixed with blood, that oozes from the inflamed surface. The eruption is attended with some itching and smarting, causing the child to tear the affected surface with its nails. In the very severe cases the discharge produces a thick discolored scab, covering the face like a mask.

Eczema capitis, or *milk crust,* is often met with in infants at the breast when cutting teeth, and at later periods of childhood in those that are scrofulous or poorly fed. It may be confined to a small part of the scalp, or it may cover the head and extend to the face and neck.

This form of the disease presents a diversity of appearance in its different stages. The eruption is preceded by

tingling and itching, followed by the appearance of small vesicles, crowded together in patches, or scattered over a large surface. When the vesicles rupture, their watery contents run out on the scalp, matting the hair together. In the acute form, the effusion is poured out for a long time; but in chronic eczema it soon dries, forming scales, which are pushed out by the hair as it grows. The vesicles, as a rule, appear first behind the ear, close to the edge of the hair, whence the disease spreads rapidly, usually attacking the ear itself. In some cases the entire scalp is covered with the eruption in a week or two, while in others it spreads very slowly.

Although the hair may fall off in eczema from the violence of the disease, yet in all cases it will re-appear during the progress of cure.

Eczema rubrum, when in its chronic stage, and situated upon the extremities, is generally called "salt rheum." When the disease is located upon the palms of the hands, or upon the soles of the feet, it constitutes, perhaps, the most intractable form of the malady. Indeed, severe cases of eczema in these localities are next to incurable. In women who are compelled to do housework, the frequent placing of the hands in warm water seems to aggravate the disease and renders remedies almost useless.

When the soles of the feet are affected, the disease is aggravated by the friction of the shoes and stockings, as well as by the perspiration produced by walking.

In the treatment of eczema the greatest cleanliness must be observed, and the dressings and clothing should be frequently changed. As long as rags and similar articles are allowed to come in contact with the diseased surface after they have once been soiled, so long will the disease continue. The clothing must be changed every day, and clean articles substituted for the soiled ones, if a cure is to be hoped for.

If the child is troubled with diarrhœa, the probabilities are that the milk or other food does not agree with it, and a change of diet may be needed. If the bowels are constipated, they should occasionally be moved with syrup of rhubarb or some other mild purgative.

If the child is scrofulous, or if it is poorly nourished and emaciated, it may be benefited by giving it cod-liver oil in such doses as its stomach will bear. In short, efforts should be made by suitable nourishment to improve its general health.

In most cases it will not be necessary to resort to medicines internally in treating eczema in children; but occasionally Fowler's solution of arsenic may be required to complete a cure. This drug, however, should be prescribed by a physician only.

The treatment of eczema in its various forms by external applications is modified according to the stages and character of the disease. Thus, in acute forms, where there is heat, swelling and inflammation, the application should be mild and soothing. A wash consisting of an even teaspoonful of sugar of lead to a pint of warm water will serve a useful purpose. Soft, well-worn cotton or linen, wet with the wash, can be kept constantly applied.

Sometimes moisture seems to aggravate the disease, and when such is the case, an ointment made of a teaspoonful of finely-powdered oxide of zinc and two tablespoonfuls of cold cream or vaseline may be used in place of the wash. If the itching is very severe, it is well to add five or six drops of muriatic acid to the ointment.

If the affected parts are greatly inflamed they should be poulticed each night, and the ointment used during the day, until the inflammation subsides. A poultice made of ground slippery-elm bark or flaxseed meal will be best for this purpose. It should be applied warm and kept moist; otherwise it will stick to the parts and irritate them.

When the disease becomes chronic, stronger applications are required. In such cases the itching is best relieved by wetting the affected parts with a mixture consisting of a teaspoonful of muriatic acid and half a pint of water. Some of this can be applied to the rawest spot, and if it produces pain, causing the child to cry, a little water can be dropped on the part to relieve the burning, after which the mixture should be weakened by adding more water to it. If the child does not flinch when the wash is applied to the sore, a few more drops of the acid can be added to increase the strength of the mixture, which should be just sufficient to cause a very slight smarting sensation. This wash can be used at night, and the sore afterwards dressed with the oxide of zinc ointment.

When the crusts are so thick and hard as to interfere with the application of the wash and ointment to the diseased surface, it will be necessary to use a wet poultice on the scalp to soften the scabs and promote their removal, even if there is but little inflammation present.

The next morning the affected surface should be dressed with an ointment made by rubbing together an even teaspoonful of white precipitate and three heaping tablespoonfuls of fresh lard or vaseline. This ointment may be allowed to remain on the parts until mid-day, when it should be removed and the oxide of zinc ointment used in its place. This can be followed at night with the water and muriatic acid mixture. As the disease yields, the parts will commence to heal from the edges, thus lessening the size of the sore, when the remedies can be reduced in strength with benefit to the patient. While it is necessary to make two or three applications of these remedies of considerable strength, yet, after they have been so used a few times, it will be better to weaken them; otherwise the inflammation may increase and spread over more surface.

In some chronic cases of eczema of the limbs, in old people, I have found the white lead paint, used after the manner directed in the treatment of burns, to speedily cure the disease after other remedies had failed.

Eczema, especially of the scalp, is prone to recur after seeming recovery. Therefore, the nurse should be on the watch to detect the least re-appearance of the disease. At first a small spot or two of the eruption may be detected. The disease, if let alone, will spread rapidly, and, in some cases, within a week will become as extensive as it was at any time during the previous attack.

The muriatic acid wash and the white precipitate ointment, as well as the oxide of zinc, should be kept constantly at hand, and when the disease begins to re-appear it should be attacked without delay. If used promptly, and according to the directions above given, these remedies will put an end to the trouble in a short time.

SCARLET RASH.

Scarlet rash is characterized by a superficial redness of the skin, appearing, in some cases, in large patches; in others, covering nearly the entire body. Usually it is attended with fever of a mild grade, which lasts but a few hours. The disease may be caused by the irritation that accompanies teething, or it may be due to a disordered condition of the stomach and bowels, the result of over-feeding, or of giving food of an improper character.

Sometimes a child, while cutting its teeth, takes a cold that produces fever and disturbance of the digestive organs, followed by the peculiar eruption of scarlet rash. In such cases the rash will usually be of a bright red color, most prominent on the breast, and when pressed upon by the finger will disappear for a moment only, re-appearing almost as soon as the pressure is removed.

Scarlet rash is a very mild disease, and is not attended with danger to life. The point of greatest interest in this affection is to distinguish it from scarlet fever. In some cases the eruption of the two diseases looks almost precisely alike, and to distinguish one from the other more attention should be paid to symptoms than to the rash itself.

In scarlet fever we can generally ascertain that the child has been exposed to the disease—at least, we can learn that there are other cases in the neighborhood, except in the very beginning of an epidemic. Scarlet rash usually appears when there are no other cases near, having a similar eruption. In scarlet fever, the throat symptoms are usually well marked, and patches of a white deposit can be seen on the tonsils. This is not the case in scarlet rash. It is true that in the latter disease we often find the throat red and somewhat inflamed, but containing no deposit. In the course of a day or two all doubt as to the character of the disease will be removed, for the reason that if it is scarlet rash, the eruption will subside by that time, while in scarlet fever it continues for a much longer period.

Treatment.—The disease requires but little treatment. If the bowels are not loose, a mild purgative should be given at the start, and a few drops of the sweet spirits of nitre in a teaspoonful of water can occasionally be administered to moderate the fever. The diet must be restricted in quantity until the fever subsides, and thirst should be allayed by small and frequent drinks of cold water. If the child suffers from itching of the skin, it should be carefully sponged with a mixture of warm water and vinegar. Pains must be taken to prevent draughts of cold air from passing over the patient, not only while the eruption is present, but also for a few days after it has disappeared.

CHAPTER XIX.

Acute Contagious Diseases.

MUMPS—PAROTIDITIS.

THIS is a contagious disease, occurring, as a rule, but once in the same person, and consists of a specific inflammation of one or both parotid glands.

The disease usually makes its appearance about nine or ten days after exposure to the contagion, but in some cases the attack begins within five days, while in others twenty days may elapse before the disease manifests itself.

Occasionally the disease begins suddenly, without any symptoms denoting its approach. Usually, however, there is slight chilliness and fever, attended with a feeling of debility, lasting a day or so, before any swelling of the jaws is noticed.

The pain in mumps is felt at the angle of the jaw and darts into the throat and ear. The jaw becomes stiff; a swelling begins under the ear and extends upwards and forwards. If the glands on both sides be affected at the same time, the face will have an enormously broad appearance. Ordinarily the swelling continues to increase for three to six days, when it begins to decline, and disappears in the course of ten or twelve days from its commencement.

While the swelling continues the jaws are stiff, rendering chewing and swallowing painful. Talking also becomes difficult, and the voice is muffled and indistinct. Saliva of

a tenacious, stringy nature forms in the mouth, causing the patient great annoyance in getting rid of it.

Often only one side is affected at first, but usually the disease extends in a short time to the other also

In some cases, when a patient has been unduly exposed to the influence of cold, or has been taking too much exercise, a metastasis takes place; the privates in males and the breasts in females becoming inflamed and swollen.

Treatment.—Mumps, although usually a mild disease, is attended with considerable pain and fever. If the pain in the jaws or ears is severe, hot poultices, or flannel cloths wrung out of hot water, applied to the affected parts, will often give considerable relief.

The bowels should be kept open by means of Epsom salts or castor oil; and when there is much fever, a few drops of sweet spirits of nitre in water may be given. If the privates become swollen and painful they should be suspended in a properly-constructed bandage, and warm applications applied to them. Pain and swelling of the breasts in females can be relieved by poultices or other warm applications.

WHOOPING-COUGH.

This is usually a disease of childhood, of a spasmodic nature, and rarely occurs oftener than once in a lifetime.

Ordinarily, in about a week after exposure to the contagion, the disease begins as a common cold; but as it advances the symptoms denoting whooping-cough become plainly marked. The symptoms of a common cold usually abate in a short time, but in this disease the cough, which often has a ringing sound, continues to grow louder, while the paroxysms last longer and are of a suffocative character. The child turns red in the face, and the whole frame is shaken with the cough, which becomes worse as the night approaches. Each fit of coughing begins with a full and prolonged inspi-

ration, followed by a series of short, hurried expirations, succeeding each other with such rapidity and force as to almost completely empty the lungs of air, and inducing a condition of seemingly impending suffocation. The child then takes a long, deep inspiration, attended with a peculiar sound—the "whoop"—from which the disease derives its name.

In some cases, especially in young infants, the "whoop" is absent throughout the whole course of the disease.

Bleeding from the nose sometimes occurs during the paroxysms of coughing. These paroxysms may be frequent or infrequent; but usually after a quantity of mucus has been expelled by coughing or vomiting, the child will breathe more easily. A child that is old enough to run about the room usually knows when a fit of coughing is approaching, and if playing, will throw down its playthings and seize hold of a chair or some other support.

In uncomplicated cases the general health may not be much affected between the paroxysms. The appetite remains good, the child is cheerful, and it sleeps well, except when disturbed by the cough.

The disease gradually increases in intensity for about a week after the whoop is heard; the spells of coughing are more frequent and prolonged; the paroxysms of suffocation are more severe, and the whoop is heard oftener. After the disease has remained stationary for about two weeks the symptoms begin gradually to decline. But for some time after the whoop ceases and the severe paroxysms of coughing have disappeared, exposure to cold will cause them to return. This is especially true during the winter season, and an attack beginning in early winter will usually affect the child to some extent until the warm weather of the following spring.

In some cases of whooping-cough the symptoms are very severe in the beginning, and consist of a high grade of fever,

difficult breathing, and other indications of bronchitis. Not until these acute symptoms have subsided will it be possible to ascertain the real character of the disease. After the child has improved, so far as the acute symptoms are concerned, the cough continues, coming on in spells or paroxysms, and after its continuance for some time the peculiar whoop is heard. This settles the true nature of the disease.

Whooping-cough, of itself, is not often dangerous to life; but owing to certain complications that are liable to occur during the progress of the disease, each case becomes a source of some anxiety to the mother. Of these complications, bronchitis and pneumonia are the most common, while convulsions and congestion of the brain may be present in rare cases.

When bronchitis or pneumonia intervenes during an attack of whooping-cough, the symptoms are increased in intensity, the skin becomes hot, the pulse is fast, the breathing is frequent, the whoop is more violent, the cough more frequent and severe, being somewhat dry, and the little expectoration that takes place consists of mucus nearly always streaked with blood.

Bronchitis or pneumonia occurring in the early part of an attack of whooping-cough is quite dangerous, and children so affected may die within a week from the beginning of the complication.

Convulsions and congestion of the brain may take place during the progress of whooping-cough and terminate in death. In rare cases a child may suddenly be seized with convulsions while in a fit of coughing, and death may happen in a moment from suffocation, caused by spasmodic closure of the windpipe. Oftener, however, drowsiness and other symptoms of brain trouble—especially vomiting not connected with paroxysms of coughing, nor due to the remedies given—will precede the convulsions.

Diarrhœa not infrequently accompanies whooping-cough, but is usually not a fatal complication, unless it continues in the advanced stages of the disease, when it may destroy life by depressing the vital powers, thus leading to fatal exhaustion.

The duration of whooping-cough is variable, and depends greatly upon the season of the year when the child becomes affected. Probably ten weeks may be named as the average duration of the disease. It often happens, however, that a child attacked during the early part of the winter will not be free of the cough until the succeeding warm weather. Then, again, cases beginning in the early spring will seemingly recover on the approach of warm weather, only to suffer a return of some of the symptoms when the cold weather of the following fall begins.

Whooping-cough being contagious, it is important to know how long a time must elapse after the disease is developed, before it loses its contagious character. No definite answer can be given to this question. The safest rule is not to allow the affected child to mingle with others who have not had the disease, until the paroxysmal cough has entirely ceased.

Treatment.—In the treatment of simple whooping-cough, hygienic means are of great importance. During the first few days, when the child has symptoms of a severe cold with fever, it should be confined to a room that is moderately warm. The sleeping apartment should be of nearly the same temperature as the one occupied during the day. Proper ventilation is necessary, but in winter very cold air should not be admitted. When the acute symptoms subside, the child may be allowed to exercise freely in the open air after clothing it sufficiently to keep it from becoming chilled. The diet must be mild and nourishing—milk forming one of the principal articles of food. Soups and broths

in moderate quantities may also be given. Coarse articles of food, difficult of digestion, should be avoided.

The chest can be well rubbed two or three times a day with a liniment composed of oil of cinnamon, one part; spirits of ammonia, two parts, and sweet oil, five parts.

If the bowels are constipated, a dose of the syrup of rhubarb or castor oil may be given, and, if required, it can occasionally be repeated during the progress of the disease. If there is much fever and heat of the skin, a few drops of sweet spirits of nitre, mixed with water, may be administered every few hours during the day, and once or twice during the night. If there is much wheezing with evidence of mucus in the air-tubes, the syrup of ipecac can be given in small doses to produce slight nausea, and if the breathing is difficult the syrup may be increased in quantities sufficient to cause vomiting.

In cases where the cough becomes frequent and distressing as night approaches, two or three grains of bromide of potash in a teaspoonful of water, to which eight or ten drops of Godfrey's Cordial have been added, given to a child a year old, will usually secure needed rest for the night.

To relieve the spasmodic cough and the difficult breathing that attends it, there are perhaps but few remedies equal to the hydrate of chloral. The usual dose is one grain for each year of the child's age, to be given in sweetened water. This remedy should be used with great caution, and unless the symptoms are urgent, and no physician can be consulted, it had better be omitted by the mother.

In the latter stage of the disease, when the secretion of mucus is excessive, alum in doses of from two to five grains, according to the age of the child, will be most useful. It can be administered in a little honey or thick syrup. As the disease progresses and the child becomes weak and emaciated, the diet must be increased, and nourishing food

should be given. In the latter stage of severe cases tonics will be required. The elixir of bark and iron, to be had at any drug store, will be found a useful tonic. A child one year old can take eight or ten drops three or four times a day.

Whooping-cough, when complicated with bronchitis or pneumonia, is dangerous to life, and such cases should be promptly placed in charge of a physician. Also, when a case is complicated with convulsions, or congestion of the brain, no one but a physician should assume the responsibility of its management.

DIPHTHERIA.

This is an acute contagious disease, attended with fever, sore throat, enlargement of the glands of the neck, and, in some cases, is followed by paralysis of the muscles of the throat, eyes or extremities. It sometimes prevails as an epidemic, and seems to bear a close relationship to scarlet fever—cases of the latter disease, without the characteristic rash, having been mistaken for diphtheria.

That diphtheria is contagious cannot be doubted, and when it appears in a family all the children may contract the disease unless they are separated from the sick. One attack does not secure immunity from subsequent ones.

The poison of this disease exists in the exudations and secretions of the throat and nose; hence the nurse should exercise the greatest care, in making applications to those parts, not to receive the poison, either by inhaling it with the patient's breath, or by permitting the matter to enter her mouth or eyes from his efforts at coughing.

The time when the disease may be expected to appear after exposure to the poison is uncertain. It may develop in two days, or not until eight or ten days have elapsed. Perhaps in a majority of cases the symptoms of diphtheria will be noticed within three days after exposure.

Diphtheria may appear in one of three forms—viz., the *catarrhal*, the *croupous*, and the *septic*, or *gangrenous*.

In the mildest, or catarrhal form, the patient at first suffers from heat, irritation, and pain in the throat, and swallowing is difficult and painful. There is chilliness, followed by fever, headache and pains in the muscles. The fever may be either mild or severe, and attended with nausea and vomiting. The tongue is covered with a white fur, and on inspecting the throat the lining membrane will be found unusually red, while small grayish-white patches will be seen situated, as a rule, on the tonsils at the sides of the throat. In some cases this deposit is found almost at the commencement of the disease, but usually it is a day or two before it appears. It may be confined at first to the tonsils, but soon extends to the back of the throat and to the posterior margin of the roof of the mouth. Usually this deposit or membrane has a grayish-white appearance; but in severe cases it may be of a dark-red color, owing to an exudation of blood.

In the mild form of the disease the membrane may be confined to small specks or flakes, which usually assume a slightly yellowish color on the second or third day, when they seem to lose their vitality, and gradually disappear under proper treatment.

The croupous form of the disease may begin as a mild attack; but instead of convalescence beginning on the fourth or fifth day, the child grows worse; the fever increases; the glands of the neck swell and become painful, while the false membrane spreads over a greater portion of the throat. The deposit often forms inside of the nostrils, preventing the patient from getting his breath through the nose. Blood, mucus and pus flow out of the nose and upon the lips, excoriating them and adding greatly to the patient's distress. The membrane in these cases may extend into the windpipe, giv-

ing rise to all the symptoms of an aggravated case of croup, speedily ending in death.

Cases of catarrhal, and especially of croupous, diphtheria may develop into the septic form. The blood becomes poisoned by the absorption of decomposed exudations and secretions from the throat, nose, and other affected parts of the body. The glands of the neck are greatly swollen and painful. The urine is scant and contains albumen, while diarrhœa and vomiting are often present. This form of the disease is usually fatal ; but recovery may sometimes take place.

The gangrenous is only an extension of the septic form. The mucous membrane of the mouth, throat and nose becomes gangrenous—mortified—emitting a horrible odor, and death speedily ensues.

Paralysis of different parts of the body may occur as the result of diphtheria, even in its mild form. When it happens during the progress of the disease it, of course, adds to the severity of the symptoms, and diminishes the chances of recovery; but when it takes place a few weeks after apparent recovery, it may be considered as an independent disease. Paralysis may begin in the muscles of the mouth and throat, causing difficulty of swallowing, and giving a nasal tone to the voice; or the muscles of the eye may become affected, causing double vision or cross-eyes; or the muscles of the arms or legs may become paralyzed and waste away, producing, in some cases, permanent lameness. But, as a rule, paralysis following diphtheria is a curable affection.

Diphtheria may be, and often is, confounded with follicular tonsilitis, which is not a dangerous disease. It is because of this mistake that we hear of so many attacks of diphtheria occurring in the same child. In follicular sore throat, as in diphtheria, there is fever and sore throat, and even some swelling of the glands of the neck, but the appearance of the deposit is different. In the former disease it consists of small

specks of a grayish, cheesy secretion, deposited at the orifices of the follicles. Instead of standing out beyond the mucous membrane, as in diphtheria, these specks are depressed or sunken. As the disease progresses the deposit does not become augmented or enlarged to any great extent, while in diphtheria there is usually a gradual increase in the size of the deposit until the disease has reached its acme. Besides, the deposit in diphtheria is upon the mucous membrane, giving it somewhat the appearance of having been glued thereon.

The appearance of the throat in diphtheria and in scarlet fever may be so much alike as to cause cases of the latter disease, when the eruption is absent, to be mistaken for the former.

When a case of diphtheria occurs in a family, the child should, if possible, be placed in a room to which others are not admitted. The disease being contagious, there is great danger that other children will take it if permitted to be near the sick one. The room must be well ventilated by carefully admitting air from other rooms.

All cloths, handkerchiefs, and other materials used about the bed, which are contaminated with discharges from the patient's mouth, throat or nose, must be destroyed, either by burning or by burying them in the ground. Discharges from the patient's bowels must be promptly removed from the room and buried. After convalescence is established, the bed, furniture and room must be disinfected, and the bedclothes boiled and thoroughly washed. No child should be admitted to the room until all these directions have been carefully complied with.

Treatment.—In the beginning of mild as well as severe cases, the mother should see that her child is kept in a well-ventilated room, and that it remains in bed most of the time. The diet should consist of such articles as are easily

digested. Milk, beef-tea, and other liquid foods may be given. As the disease advances and the child becomes debilitated, the necessity of supporting the strength by feeding increases correspondingly. Under such circumstances stimulants, such as egg-nog, wine, etc., should be given, and every effort possible made to nourish the child.

A teaspoonful of powdered chlorate of potash can be added to a pint of water, of which mixture the patient can take a tablespoonful every three or four hours.

Locally, a gargle of very warm water should be used four or five times a day, each gargle to be followed by another made by dissolving a large teaspoonful of tannin in two tablespoonfuls of alcohol, to which should be added four tablespoonfuls of water. Of this mixture a tablespoonful can be used each time. If the child is too young to use the gargle, the mother may take a good-sized camel's-hair brush, and, dipping it into very warm water, wash the affected part of the throat, removing the mucus to some extent; then dipping the brush in the alcohol and tannin mixture, she must make a thorough application to the diseased structures. In mild cases the diphtheritic deposit will soon lose its white appearance, become somewhat yellow, and in two or three days disappear.

When the glands of the neck are swollen and painful, very warm sweet oil or fresh lard may frequently be applied to them, and gently rubbed into the skin with the hand.

Unless the bowels are loose at the beginning of the attack, a small dose of castor oil or syrup of rhubarb should be given, so as to act gently, but without purging the child enough to weaken it. Should the child show signs of growing worse, even in the mildest cases, and in every case where the disease is at all severe in the beginning, no time should be lost in temporizing measures, but a physician must be summoned as soon as possible.

Probably in no disease is it more important to guard the patient against taking cold than in diphtheria. During convalescence from even an ordinary case, the mere going into a cold room and remaining there for a few minutes may be sufficient to cause a fatal attack of croup.

CHAPTER XX.

Acute Contagious Diseases.

(*Continued.*)

SCARLET FEVER, OR SCARLATINA.

ATTACKS of scarlet fever are usually confined to the period of childhood. The disease rarely occurs more than once in the same patient. Epidemics differ greatly in their severity—some being very mild, while others are attended with a fatality rarely observed in any other disease.

Epidemics of scarlet fever are rarer in small towns and country districts than in large cities; but they are usually of a more severe type in the former than in the latter localities.

An attack of scarlet fever may be so mild as not to cause the child a single day's confinement to the bed; while, on the other hand, it may be so deadly as to destroy life in a few days, or even hours. The disease usually makes its appearance in about seven days after exposure. Sometimes, however, twelve or fourteen days may elapse before the child shows any signs of being sick.

Scarlet fever has been divided into three forms, corresponding to the severity of the attack. In the *simple form* the disease usually begins with vomiting, often repeated; with fever, as shown by the intensely hot skin, rapid pulse, great thirst and headache; with delirium to a greater or less degree. Usually within twenty-four hours from the com-

mencement of the attack, the peculiar rash makes its appearance. Beginning on the neck and upper part of the chest, it extends during the next twenty-four hours to the body and the extremities. The color of the rash is bright red, caused partly by the blush of the skin and partly by the appearance of little spots or specks, which are distinct, though not elevated. Between these spots, at first, are small spaces of pale skin, which soon become reddened by the red spots coalescing. The skin around the mouth and chin is usually pale, being in striking contrast to the intense redness of the neck. The rash generally becomes deep in color and more diffused over the body during the first three days, after which it slowly declines, disappearing about the seventh or eighth day.

The fever and acute symptoms usually continue, increasing in severity until the eruption has reached its height, when they gradually decline with the disappearance of the rash. In extremely mild cases the fever may subside when the rash is fully out.

The soreness of the throat is a symptom usually present on the second day. Swallowing becomes painful, the tonsils and back part of the throat are red and swollen, the tongue is covered with a whitish fur, through which project little elevations that are usually red and prominent, constituting what is known as the "strawberry" tongue.

As the rash subsides the outer layer of the skin begins to peel off in scales, the largest coming off of the hands and feet. Sometimes the peeling-off process is not so distinctly marked, and consists in the skin's throwing off small thin scales.

In the *anginose form*, the disease expends its force mostly upon the throat. The first symptoms are usually more severe than in the simple variety; the rash is longer in making its appearance, and sometimes, instead of being dif-

fused over the whole body, it appears in large patches, especially on the back. In this variety the rash may (though this is rare) be entirely absent, the disease showing itself only in the throat. Such cases may be mistaken for diphtheria—an error that will be recognized only when other children of the same family have scarlet fever with all the symptoms well marked.

Soon after the beginning of an attack of the anginose form of scarlet fever, soreness of the throat, with difficulty of swallowing, and pain and stiffness of the neck, and swelling of the glands under the lower jaw, will be noticed. The throat, on examination, is found intensely red; the tonsils red and swollen, the swelling rapidly increasing until it nearly closes the back part of the throat, thus rendering swallowing so difficult that fluids are often returned through the nose. A thick, sticky mucus collects about the back part of the throat, and patches of deposit, in appearance much like that seen in diphtheria, form on the tongue. In severe cases a thick, adhesive, yellowish matter adheres to the nostrils, obstructing the free passage of air, and adding to the difficulty of breathing. This yellowish secretion sometimes runs out of the nose upon the upper lip, producing excoriations and troublesome sores.

In some cases the parotid glands and the tissues at the side of the neck become inflamed, swell rapidly to a great size, and feel hard to the touch. This may be confined to one side or it may affect both sides of the neck. The patient is unable to open his jaws wide enough to take any but liquid nourishment; the voice is smothered, and speaking is painful. The tongue becomes dry, is covered with a brown fur, and is red at the tip and edges.

Malignant scarlet fever may be considered as an aggravated form of the anginose variety. Some patients, however, die before the throat symptoms are developed. Death may oc-

cur within forty-eight hours from the beginning of the attack. In such cases the child may have convulsions at the start, followed by coma and death; or the attack may be ushered in by symptoms of profound shock, from which the patient rallies only to sink from its effects in a day or two. In other cases an uncontrollable diarrhœa sets in and speedily destroys the patient.

But death does not always take place so soon; the patient may live for a week or two, dying, finally, from the absorption of poisonous secretions from the nose or other parts, or from the destructive ravages of the disease in the throat. Sloughs may occur in the back part of the throat and in the tonsils, leaving deep, ragged and unhealthy ulcers. The swelling of the parotid glands increases, and by extending to other tissues near by, forms a sort of collar of great hardness around the front and sides of the neck, which interferes with both breathing and swallowing. These swellings rarely suppurate, but occasionally large quantities of matter form in them, destroying the cellular and other tissues of the part. After the matter has been evacuated, the muscles and blood-vessels of the neck may be seen; the tissues between them having been destroyed by the ulcerative process.

Sometimes the various joints of the body are affected during the progress of scarlet fever, due, most likely, to the absorption of poisonous material from the throat and neck.

Inflammation and suppuration of the ear often follow scarlet fever. In some cases the hearing is permanently destroyed or greatly impaired, and in others, although the hearing is not affected to any great extent, the running of matter from the ear will continue for months or years, requiring careful attention to keep it clean by daily syringing with warm water.

The kidneys often become affected during the course of scarlet fever, leading to dropsy after the acute symptoms

have passed away. This is apt to occur after a mild attack, the reason being that in such cases children are permitted to go into the cold air too soon after the skin has peeled off. Nearly all cases of dropsy following scarlet fever are produced by early exposure to cold; hence the child should be kept within doors for at least two weeks after seeming recovery from even mild cases.

When dropsy occurs after scarlet fever, the child will at first be languid and fretful, with a slight fever and hot skin. The appetite fails, and the bowels are usually constipated. In a little while a puffiness is noticed about the eye-lids, and the face is slightly swollen; the swelling soon extends to the hands and feet, and the abdomen becomes hard and tense.

If properly treated, this form of dropsy usually disappears, and the child recovers its health. But occasionally the kidney affection present in these cases results in death, either from convulsions, from the supervention of pneumonia, from pleurisy, or from the abundant effusion that takes place in the chest.

Treatment.—As soon as a child is known to have scarlet fever it must be separated from other children, and placed in a room of moderate temperature. The room must be well ventilated, but no current of air should be permitted to pass over or near the patient. All secretions from the mouth, throat and nose must be removed and destroyed as soon as possible. The discharges from the bowels should be taken from the room and buried without delay. The diet must be mild and mostly of a liquid nature. Milk, beef and chicken broth, and, in mild cases, rice, oatmeal, tapioca, and other bland articles, can be allowed. In protracted cases, when the strength begins to decline, the food should, if possible, be increased, and fresh milk, if it agrees with the child, can be given often and somewhat freely.

The throat should be kept as free as possible from the thick, tenacious mucus that collects upon its lining membrane. If the child is old enough, it can use the alcohol, tannin and water gargle described in the article on diphtheria. If too young to use it in this manner, the nurse can apply it to the throat with a camel's-hair brush, as directed in the same article. In severe cases, where the throat is badly affected, much stronger applications must be made, but these should be used only by a physician.

In this disease, as well as in diphtheria, the remedies must be applied to the throat carefully and quickly, so as not to irritate the parts enough to cause a paroxysm of coughing; otherwise some of the secretion from the child's throat may be expelled with such force as to find its way into the nurse's mouth or eyes. If such an accident should happen, the poisonous material must be gotten rid of by immediately and thoroughly bathing the mouth or eyes with warm water.

If there is much swelling or pain in the neck, a warm poultice of flax-seed meal should be applied. If the fever is very high, sponging with warm water will be beneficial and soothing. This must be done with care, the sponge being used while the child is lying on one blanket with another thrown over it.

A teaspoonful of chlorate of potash may be added to a pint of pure water, and a dessertspoonful of this given to the child when it is thirsty.

In the beginning of the disease a dose of rhubarb or magnesia may be given to move the bowels thoroughly, but it should not be repeated except upon the advice of a physician.

The treatment of severe cases of scarlet fever will not be given in this book, as no one but a skilled physician should undertake the management of such a fatal disease.

MEASLES.

Measles is a contagious disease, occurring, with rare exceptions, but once in a lifetime. It is not only communicated by actual contact with the sick, but the contagion may be conveyed long distances through the medium of clothing and other articles. Susceptibility to the poison differs in different persons, and infants at the breast are rarely affected by it. The contagious principle is present from the beginning to the end of the disease, but it is most marked when the symptoms have reached their highest point.

The eruption usually makes its appearance within fourteen days after exposure, and on the fourth day of the fever; but this rule has many exceptions, for the rash may appear on the second or third day of the fever, and in rare cases it may be delayed for a week longer.

An attack of measles begins as a common cold. The patient, after having been in good health, becomes restless, thirsty and feverish, and complains of headache. The eyes are red, weak and watery, and sensitive to light. Fits of sneezing occur quite often, and the patient is troubled with cough, which is at first short and dry, but afterwards changes in tone, so that on the third day, when the disease has reached the larynx, it is harsh and resounding, soon becoming hoarse and husky. Further along in the course of the disease, the cough is looser and is followed by copious expectoration of mucus. Usually on the fourth day the rash makes its appearance, first on the face, whence it extends, in about forty-eight hours, over the rest of the body and extremities, traveling from above downwards. By careful examination, the eruption may often be seen in the roof of the mouth several hours before it appears on the skin.

The eruption of measles is of a dark red (sometimes of a rose) color, and somewhat resembles flea bites. The erup-

tive spots are small, and, although close together, they are distinct, leaving the skin between them of a natural color. They are slightly elevated above the surrounding skin, especially on the face. These spots are usually crescentic in shape, except where they become confluent, or join each other, which is apt to occur on the cheeks, when they constitute irregular blotches, a third to a half inch in length, by half of that size in breadth. The eruption fades in the same order in which it appeared. Within forty-eight hours from its appearance on the face, it is at its height on the trunk. It now begins to fade from the face, continuing, gradually, from above downwards, until on the seventh day the rash grows faint on the body generally, and on the eighth or ninth day it has vanished, leaving behind a little redness of the surface, or a few yellowish red spots.

In some cases, when the fever has been high and the rash profuse, there is, after the disappearance of the eruption, a slight exfoliation of the skin in the form of minute branny scales; but it is never so great as after scarlet fever.

The fever in measles does not subside upon the appearance of the rash, but for a day or two after it increases in severity. Usually, however, by the sixth day it abates, and the cough becomes easier and less frequent.

Cases of measles not complicated with other diseases usually end in recovery, and require but little medical treatment. Complications may, however, arise during the course of measles, rendering an attack dangerous to life. Thus, in rare cases, convulsions may imperil the lives of young children before the rash is noticed. Usually, however, they cease after the eruption appears, the child finally making a good recovery. In other cases the rash, after having been well developed, prematurely disappears, and is followed by convulsions, which may terminate in death.

Sometimes, though rarely, croup may supervene during the progress of measles. The hoarse cough and suppressed

voice that are present in the early stages of measles often lead one to fear that an attack of croup is impending; but such a complication is more apt to occur when the eruption is on the decline, or has disappeared, than in the early stages of the disease.

Owing to a retrocession of the rash, pneumonia or bronchitis may arise during the course of measles. So, also, if a patient is unduly exposed to the influence of cold during the decline of measles, he may suffer from bronchitis or pneumonia, thus incurring disease of the lungs that is liable to terminate in consumption.

Occasionally, when a child is attacked with measles while suffering from bronchitis or other lung trouble, the rash shows itself imperfectly, and is at first of a dark, livid hue, the breathing being labored and attended with great difficulty. This form of the disease has been called by some "black measles," and is caused by congestion of the lungs or other organs.

Diarrhœa may be severe and persistent during the course of measles. Even a mere looseness of the bowels should receive attention; otherwise it may terminate in severe diarrhœa, or perhaps dysentery.

Treatment.—A simple, uncomplicated case of measles requires very little medical treatment; confinement to a warm, well-ventilated room, with a spare diet, constitutes the most important part of the management of such a case. Where the cough is troublesome, relief may be afforded by giving small doses of a mixture containing two parts of syrup of ipecac and one part each of sweet spirits of nitre and Godfrey's Cordial. Of this mixture twenty drops can be given to a child one year old, and repeated every three or four hours if the symptoms be urgent.

Sometimes when the eruption declines, the patient suffers from an intense itching of the whole surface. Relief is ob-

tained by sponging the body with very warm water (the patient lying under a blanket), and, if necessary, following the sponging by an application of vaseline to the skin.

If the bowels are constipated they can be gently moved by a suitable dose of syrup of rhubarb or castor oil; but excessive purging must be guarded against. The diet must be plain and nourishing. Rice, milk and similar articles can be given in such quantities as the patient may be able to digest.

The treatment of a complicated case of measles should always be conducted by a qualified physician. In the absence of such a person an intelligent mother can greatly assist nature in restoring the patient to health even in serious cases.

If the lungs become involved, as shown by rapid and difficult breathing—the child seeming to be in the greatest distress—and if the eruption is not well out, the mother can place the patient in a hot bath for a few minutes. After taking it out of the bath it should be dried and wrapped in blankets. This will often cause the eruption to appear upon the skin and greatly relieve the oppressed breathing. If, however, the breathing continues difficult, a mustard plaster, mixed as heretofore directed, should be placed over the front part of the chest.

If croup is threatened, the mother should push the administration of the syrup of ipecac, giving larger doses than before, and also apply hot flannel cloths to the throat. The cloths should be of several thicknesses in order to retain heat for a long time.

Diarrhœa can be controlled by restricting the diet to rice, boiled milk, crackers, etc., and giving either Godfrey's Cordial or Dover's powder in suitable doses.

Convulsions occurring either before the eruption has appeared upon the skin, or upon a retrocession of the rash

after it has once shown itself upon the body, are best treated by placing the patient in a hot bath. The child should be kept in the hot water only a few minutes at a time, after which it should be enveloped in blankets. The bath may be repeated at suitable intervals until the convulsions cease or the eruption appears. Medicines to control convulsions should be given by a physician only.

Rotheln, or German Measles.

This is an eruptive fever, propagated by contagion, and attended with a rash resembling that of true measles. The rash begins on the first day of the illness and appears primarily on the face, extending within twenty-four hours to the body and limbs. The fever and eruption usually disappear on the third day. The sneezing, the red, watery eyes and other symptoms of catarrh that precede the eruption of measles, are not observed, to any great extent, in attacks of rotheln.

About two weeks usually elapse between the time of exposure and the beginning of the disease. There are many exceptions, however, to this rule.

It is rare that a person suffers from this disease a second time; but an attack of German measles is no protection to one who is exposed to the contagion of true measles.

Rotheln is often met with during the prevalence of an epidemic of measles, and a patient, after recovering from it, may suffer in two or three weeks from the latter disease. Infants at the breast are not as susceptible to the contagion of rotheln as children who have passed the period of weaning.

This disease is contagious both before the rash appears and for several days after its subsidence; hence it is very difficult to prevent its spreading, even by isolating the sick.

The first symptoms that are noticed after exposure are giddiness and pain in the head, aching in the back and

limbs, and a little tenderness of the throat. These symptoms are usually present a day or two before the rash appears, but they may be so slight that no notice is taken of them, the rash itself being the first thing that calls attention to the disease. While the glands of the neck may be slightly swollen and the throat red, there is an absence of the exudative deposit upon the tonsils that is met with in scarlet fever.

The eruption in rotheln consists of bright red rounded spots, with clear skin between them at first, though they soon become joined together. They are not grouped in patches as in measles, but more diffused like in scarlet fever. The eruption is more elevated and distinct in spots than in the latter disease, and besides it lacks the finely diffused bright redness on the neck and chest that is seen in scarlet fever. The rash fades from the face and upper part of the body while it is spreading to the limbs, and is, therefore, less intense on the third day. After recovery the skin does not peel off as in scarlatina. The fever is usually highest on the first day of the eruption and subsides on the third day. For a week after the rash fades there is a tendency to its recurrence with fever from slight causes.

Rotheln is distinguished from true measles by its sudden appearance without the previous sneezing, red watery eyes, and cough, that precede the latter disease. The eruption, though greatly resembling measles, is not so crescentic in shape and is more evenly diffused over the body, nor is there such a gradual approach of fever before the rash appears.

From scarlet fever it is distinguished by the absence of the peculiar deposit in the throat, the strawberry tongue, and the swelling at the angle of the jaw, that belong to the latter disease. Besides, the eruption on the first day consists of rounded spots, larger and more elevated than in scarlet fever, and it is not until the second day that the redness becomes diffused as in the latter disease.

From scarlet rash it is to be distinguished by the eruption, which, in the latter malady, consists, at first, of minute points not raised above the skin surrounding them, which soon coalesce, forming a diffused red surface closely, if not completely, resembling the rash of scarlet fever. Scarlet rash lasts but a day or so, while the eruption of German measles continues for three days; and besides, scarlet rash, unlike the latter, is not a contagious disease, and does not occur in an epidemic form.

But little treatment is required in German measles. Rest in bed for a few days and confinement to the house for a week is most that is necessary. Small doses of sweet spirits of nitre in water, when the fever is high, will be useful, and the patient may drink freely of lemonade. If the throat is painful, or if it is lined with tenacious mucus, a gargle of alcohol and water, to which a little chlorate of potash has been added, will be beneficial.

Attention should be paid to the bowels, and if they are inclined to constipation a mild dose of castor oil or syrup of rhubarb may be given. The diet should be confined to mild articles that are easily digested.

VARICELLA, OR CHICKEN-POX.

This disease may be propagated either by contagion or by epidemic influences. It occurs but once in the same individual, and is not dangerous to life. In some very mild cases there are no premonitory symptoms, the eruption itself being the first thing noticed. Usually, however, the child suffers from slight chilliness, followed by fever, headache, pain in the back, thirst, and loss of appetite.

The eruption, as a rule, appears primarily on the back or chest, though in many cases it is first observed on the face, neck or abdomen. It consists of small, slightly elevated, rose-colored spots, varying in number from a dozen or two to several hundred. These spots, which are at first very

small, in the course of twelve or twenty-four hours from their appearance contain a clear watery fluid. They soon enlarge, assume a somewhat round shape, have a glistening appearance, and in a short time their contents become opaque or cloudy. At the end of the second day the vesicles are completely developed, and on the third day they present a somewhat pustular appearance. As a result of the child's rubbing the parts to relieve the troublesome itching, a few true pustules may develop. On the fourth day the vesicles begin to dry up, and by the sixth complete scabs form. The scabs fall off in a few days, leaving red spots, some of which may be pitted. A single crop of the eruption may be said to complete itself in five or six days, and as two or three crops appear on as many successive days, the illness will last a little more than a week. In rare cases there may be four or five crops of the eruption, causing the illness to continue for two weeks.

This disease may be mistaken for varioloid. In the latter, however, the initiatory fever is more severe, lasting three or four days instead of from twelve to thirty-six hours, as in chicken-pox. The eruption in varioloid begins on the face and extends very slowly to the body and extremities, while in chicken-pox it usually begins on the back or breast and spreads rapidly. Within twelve to twenty-four hours after their appearance, the eruptive spots become vesicles filled with a clear fluid, which soon becomes cloudy or opaque, and on the third day some of them may contain matter. On the fourth day the vesicles begin to dry up, and by the sixth form complete scabs.

The treatment of chicken-pox consists in confining the patient to his room, and if there is much fever, to his bed, for one or two days, and giving him mild nourishing food.

Constipation of the bowels should be corrected by a mild laxative, and, if necessary, the sweet spirits of nitre can be administered to moderate the fever.

CHAPTER XXI.

Accidents and Injuries.

BURNS AND SCALDS.

BURNS and scalds differ from each other simply in this, that one is the result of dry and the other of moist heat. For practical purposes, they may be considered as identical.

As a rule, a burn, while limited to a smaller surface, usually affects deeper structures than a scald. However, cases often occur where, from the burning of a child's clothing, a large portion of the surface of the body is involved.

Scalds produced by contact with hot water or steam are usually extensive in character. Occasionally—usually in adults—the throat and air-passages are affected from inhaling the vapor of escaping steam.

Contrary to the usual belief of non-professional persons, the danger of a burn depends more upon the extent of surface involved than upon the depth of the injury. Thus, while a child may recover from a burn that has destroyed the structures to a considerable depth, but is of limited area, it is almost certain to die if one-third of the surface of its body is merely blistered.

In cases of burns or scalds involving a large portion of the body, death is often caused by the shock. The patient feels exceedingly cold, or perhaps has violent rigors. His pulse is small, frequent and feeble; his respiration is oppressed,

and there is extreme restlessness, with great thirst and sickness at the stomach. If he lives over the primary effects of the shock, and reaction takes place, he will have violent fever, a flushed countenance, and a quick, irritable pulse, with a tendency to delirium. If he dozes, it will be but for a few moments at a time, during which he will talk incoherently.

Usually the pain produced by a burn is of a most intense character; but sometimes the shock is so great as to overwhelm the nervous system, in which case the patient will complain but little of suffering. If death is not produced by the shock or its results, it is liable to occur from certain complications that may arise in the course of a few days. Thus, if the neck or scalp be the part burned, inflammation of the membranes of the brain may follow; if the chest be involved, inflammation of the lungs may result; while, if the abdomen be the seat of the injury, there is danger of inflammation and ulceration of the duodenum, or small bowel.

Death from burns is, in children, usually preceded by convulsions; and it is very rare that a child having convulsions, the result of a burn, ever recovers.

If a child's clothing should take fire those persons who may be near by ought not to lose their presence of mind and permit the sufferer to run about in the air, thus fanning the flames and adding to their destructive ravages. The child should be quickly thrown upon the floor and rolled over and over upon the carpet. If possible some such article as a hearth-rug, or a shawl, or a coat should be thrown over it and made to envelop its body as closely as possible.

It often happens that grown females, who ought to know better, finding their dress in flames, rush out into the open air screaming for help, instead of lying down upon the floor, and, drawing their clothes about them, roll over until the fire is extinguished. If they can pull up part

of the carpet and throw it over them, and then roll over once or twice until the carpet is closely pressed against the body, the fire will soon be extinguished. At any rate, they must not stand erect, for, when the body is in an upright position, the flames will rush upwards to the head, neck, and other important parts.

Children are often injured by turning the boiling contents of a tea or coffee-pot over upon themselves, producing extensive scalds. Others fall into vessels of boiling water, and in this manner suffer injuries that often prove fatal.

One of the most dangerous forms of injury from scalds is that produced by swallowing the hot contents of a tea or coffee-pot. In such cases a physician should be summoned without delay, as the swelling of the tongue, mouth and throat may threaten suffocation.

The treatment of burns in children will vary with the nature and extent of the injury. In the worst cases—those endangering the life of the child—the treatment must be directed to the general system as well as to the local injury.

In cases attended with great shock, it may be necessary to give stimulating and anodyne medicines; but, as a physician should be sent for as soon as possible, medicines of that character should be left to his judgment. But if it be impossible to secure his services within a reasonable time, the nurse may, if the child is suffering great pain, venture upon the administration of two drops of laudanum to a child one year old, while older children can take an extra half drop for each additional year of their age. The dose must not be repeated by the nurse, but as soon as the physician arrives he should be advised of the measures that have been taken for the child's relief. If the patient is cold and shakes with rigors, a few drops of the aromatic spirits of ammonia in water, or, what is better, in a little ginger tea, can be administered. A child six months old can take four or five

drops of the ammonia, while one a year old can take eight drops, and so on in proportion to age. During the cold stage, soft blankets should be gently thrown over the patient, and every effort made to restore warmth to the body.

If there are blisters upon the body, the result of the burn or scald, they must be punctured with a needle or the sharp point of a pair of scissors, to permit the water to escape, so that the dressing can come in closer contact with the diseased surface. This should be done with care in order not to remove the skin, which should be left as a protection to the surface beneath.

The burnt surface, whether it be extensive or limited in area, must be protected from contact with air. Various applications have been recommended in the treatment of burns, the primary object of them all being to exclude air from the wound.

In cases of burns not involving those parts of the body where the glands are situated, there is no remedy equal to white lead. Soon after its application the pain and burning cease to a great extent, and the scars left after treatment, if the lead has been properly applied, are less than where other remedies are used. Some writers have advised against its use, believing that if applied over glandular structures it might cause "lead palsy"; but it is doubtful if any danger of the kind need be apprehended. However, it may be safer to omit its use on those parts of the body in which the large glands are situated, such as the groins, the arm-pits, under the knee-joints, under the jaws, and about the sides of the neck. If these localities are the seat of the burns, bismuth, or the oxide or precipitated carbonate of zinc, thoroughly pulverized and mixed with linseed oil to the consistency of thick cream, may be used in the same manner as the white lead. In extensive burns, that portion of the body where the glands lie may be dressed with the bismuth

or zinc paint, while other portions are covered with the white lead.

Both the white lead and zinc paint must be made very thick, so that the heat of the burned part of the body will not melt it and cause it to run off the surface. The dressings should not be removed unless they become foul and offensive, or are separated from the surface by the matter that forms under them. *Frequent changing of the dressings must be avoided in all cases.* If they become deranged or slightly detached, leaving a part of the wound exposed, a fresh application of the paint must be made over the old dressing, leaving it undisturbed.

The ground white lead must be mixed with linseed oil to the consistency of *very thick* cream. The thicker it is made the better, provided it can be evenly spread over the surface.

If the face be the part burnt, the lead should be applied with a soft brush, and no rag or other dressing ought to be placed over it. If the paint becomes rubbed off the burn, it must be immediately re-applied, the object being to keep it continually covered, permitting no air to come in contact with the raw surface. The paint must not be washed or rubbed off after it is once applied, but be left to peel off without interference. When new skin has formed over the burn, the paint and the dead skin will readily come off, leaving a healthy surface beneath. The new skin will at first be very tender, and vaseline or sweet oil may be applied to it occasionally with a feather or camel's-hair brush, until it becomes harder and loses its sensitiveness.

If the burn is situated upon the limbs or parts of the body where the clothes or bed-clothing will rub it, the application of the lead must be made in a different manner. In such cases it must be gently painted over the burnt surface and also spread on well-worn cotton or linen cloths. The cloths must then be smoothly laid over the burn, taking care

that there are no wrinkles or other defects in the dressings. The dressings should be closely watched, and if they become disarranged, leaving a part of the burn exposed, they must be carefully re-adjusted. Unless there is a good deal of suppuration from the wound, causing it to become foul and offensive, the dressings should be left on until the parts are healed.

Burns often become painful and difficult to heal owing to the frequent removal and application of dressings. A burn that is not deep, if properly treated, will secrete but little, if any, matter. But in those cases where the injury is deep-seated, there will be considerable suppuration, and the abundant matter will have to be removed by careful washing. When the dressings become foul they must be removed and new ones applied. This must be done with gentleness and care, so as not to irritate the wound and thereby increase the inflammation.

To wash the wound, a sponge should be dipped in tepid water and gently squeezed, holding it a little above the sore, so as to cause the water to fall on the affected parts until they are thoroughly cleansed. After the matter has been sufficiently washed off, the sponge should be dipped in fresh tepid water to which a little alcohol has been added—say one part to six or eight of water—and this should be allowed to drop over the surface of the wound. If, after the parts begin to suppurate freely, the sore does not show signs of healing quickly, the white lead may be omitted and a suitable ointment substituted in its place. If the sore is red, inflamed, and painful, a poultice made of the bark of slippery elm, or of flaxseed meal, may be applied each night while the inflammation is severe.

In using these poultices, the material of which they are composed should come in contact with the sore, no rag or cloth being allowed to touch the inflamed surface. The

poultice should be dispensed with each morning, and during the day the sore should be dressed with benzoated oxide of zinc ointment, which can be had at any drug store.

If the sore assumes a white or indolent appearance, a stimulating salve—such as the common basilicon or resinous ointment—should be used. Many persons know how to make a salve of mutton tallow, lard, beeswax, and resin, which is similar to the basilicon ointment. Poultices should never be used on a sore that presents an indolent appearance, but they should be confined to those characterized by inflammation and redness. A pale, indolent sore that is slow in healing will be materially benefited by dusting over its surface, once a day, a little calomel; and this treatment can be pursued in such cases, provided the sore is not too large, nor situated over the joints and flexures of the body where the glands lie. To apply calomel to a raw surface in these localities might possibly produce salivation.

If the sore is small and not situated over any glandular structure, and if it does not heal under the foregoing treatment, it can be dressed twice a day with calomel ointment.

The principal mistake made by non-professional persons in the treatment of burns, as well as other wounds, is too much interference with nature. They not only wash such wounds too often, but by rubbing with rags or sponges they irritate them. A sore should be cleansed by letting the water from a cloth or sponge fall upon it until the matter has been washed away. It can then be dried by gently wiping the skin around it with a dry cloth, leaving the sore itself to dry without interference. If, in using a poultice, a part of it sticks to the raw surface, they are not content until they have pulled or washed it loose. This is all wrong, and does a great deal of harm. If a poultice is kept wet enough while it is applied to a wound (and if it is not wet it will do positive harm), it will never stick to the surface. If,

however, a part should adhere to the sore, it must not be removed harshly; but it must be thoroughly wet, after which a fresh poultice should be placed over it.

Deep burns leave ugly scars, for, as the sore heals, the adjacent structures are drawn inwards, giving a puckered appearance to the parts.

Sometimes the scars left after the healing of deep burns produce so much deformity that a surgical operation becomes necessary to correct it.

If the white lead with which to dress a burn cannot be readily obtained, some other article must be used as a temporary dressing.

A good *immediate* application to burns consists of common baking soda, to which enough water has been added to form a thick paste. This can be spread over the burnt surface, after which a soft cloth thickly covered with the paste can be applied. This dressing should be allowed to remain in place until the white lead has been obtained, when the burn should be dressed with the latter article.

Dusting flour, starch, and such articles on burnt surfaces should be avoided, for the reason that they soon form crusts, which crack, loosen, and injuriously irritate the parts.

GUNPOWDER INJURIES.

Children often sustain severe injuries of the face, hands, and other parts of the body from the explosion of gunpowder.

One of the unpleasant results of such injuries is the indelible stain that is sometimes left in the skin. This can to some extent be obviated by carefully picking out each grain of powder with a sharp-pointed knife. It requires time and patience to do this, and, at best, some grains will likely be left.

Treatment.—These injuries should be treated as burns; and the white-lead paint is, perhaps, the best application that can be used. In addition to relieving pain and inflam-

mation, it seems to have some effect in preventing discoloration of the skin.

When the white lead is once applied it should not be removed; but if any part of the wound becomes bare from rubbing or from other causes, a fresh application should be immediately made. After awhile the outside skin will peel off, leaving the part below tender and sensitive, requiring the use of a little sweet oil to allay any irritation that may be present.

SWALLOWING FOREIGN SUBSTANCES.

Children often swallow various metallic substances, such as coins, buttons, pins, needles, etc.

It is rare that any serious effects follow these mishaps, and but little need be done in the way of medical treatment. After awhile the article that has been swallowed finds its way out by the natural passages. Smooth articles, like coins, are evacuated with the discharges from the bowels, and to satisfy herself that the child has been rid of the offending substance, the mother ought to carefully examine the contents of each stool. In a case that came under my observation a small child swallowed a nickle five-cent piece, which remained in the bowels for three or four months. The child suffered from diarrhœa, and became greatly emaciated; but, after the coin passed by stool, it soon regained its health, and became as well as it was before the accident.

Treatment.—When the substance swallowed is smooth, and of such shape and nature that it can pass with the stools, it is a good practice occasionally to give a dose of castor oil to aid the bowels in expelling it. But if a pin, or needle, or bit of sharp glass, be swallowed, all purgatives must be withheld, as they might do harm. In such cases, it is best to feed the child, at rather short intervals, with rice and other mild, solid articles, in order that the foreign body may be

enveloped by the other contents of the bowels in its downward passage.

Needles seldom pass with the stools, but may find their way to the surface of the body at almost any point.

FRACTURES AND DISLOCATIONS.

Fractures of the bones in children, though painful at the time of their occurrence, are not as serious in their results as fractures sustained by grown people, especially those who are advanced in age. A broken bone in a child, if properly treated, may give but little trouble, while the same kind of accident occurring in advanced life may result in severe deformity.

In childhood the collar bone, the thigh bone, the bones of the arm and leg, are liable to be broken as the result of falls and other mishaps.

In every case of injuries of this character, the patient should be placed in charge of a competent physician without delay, as a prompt adjustment of the fracture, followed by a suitable dressing, is necessary to obviate deformity. But until the physician arrives, the child should be placed in an easy position, and the injured bone must not be disturbed unnecessarily.

If the bones of the leg have been broken, the limb must be straightened so as to assume its natural position, and the child laid on a mattress or table on which a comfort has been folded. A feather bed is too soft and yields too readily to pressure, thereby permitting the leg to get out of shape.

Fracture of the collar bone soon heals in a child, and although a knot or swelling is usually left for awhile, it will in the course of time disappear, leaving no trace of its previous existence.

Fractures of the bones of the arm usually heal readily, and after the injury has been properly attended to, the child may, in a day or two, be on his feet with his arm in a sling.

Dislocations of the joints are also met with in children. The elbow joint is perhaps the one most liable to be dislocated, though the same injury may happen to the shoulder, hip, knee, ankle and wrist. These dislocations are usually not hard to reduce, but every case should be treated by a competent surgeon, as otherwise deformity, with impaired use of the limb, might result.

SPRAINS.

If a child suffers a severe sprain, especially of the knee or ankle, it is best to seek medical advice, as such injuries may be serious in their results and more tedious in recovery than the fracture of a bone. Sprains of the joints are followed by stiffness, or loss of freedom of motion. This condition may last for some weeks; but in children, if there is no displacement of a bone, recovery with good use of the joint will finally take place.

Treatment.—A sprained joint should be immersed in water as hot as can be borne, for a quarter or half hour, or until the pain ceases. After this, flannel wrung out of hot water can be kept constantly applied for a day or two. By this time the pain will usually have subsided, leaving but little swelling. A bandage, nicely adjusted, so as to make even pressure on the part, may be worn until the joint can be used without much pain. Such a bandage is best made of plaster of Paris. If the joint remains stiff, it can be bathed with a stimulating liniment, gently rubbed with the hand, and the parts cautiously worked backwards and forwards, so as to overcome any adhesions that may have formed.

BRUISES.

A simple bruise, without injury to a bone, is usually of trifling importance, and requires but little treatment. A cloth dipped in a mixture of alcohol and water, and applied to the injured part, is sufficient for the cure of most cases.

BLOWS ON THE HEAD.

Blows and falls upon the head may be followed by serious results; the skull being fractured in some cases, while in others there is concussion of the brain without any fracture of the skull. If the brain be seriously injured, the child will likely become unconscious, vomit, and have hard, noisy breathing. In some cases, however, of severe injuries of the kind, no marked symptoms are observed until two or three days, perhaps a longer time, after the receipt of the injury. But all injuries of the head from falls or blows, that produce vomiting and loss of consciousness, are not necessarily serious in their results. Grave symptoms may follow slight injuries, but in such cases they soon pass away, leaving the child as bright as it was before the accident.

Injuries of the head should be treated by a competent surgeon, as it is, in many cases, impossible to say how serious the results may be in the future.

WOUNDS.

Wounds may be *incised*, as when made by a knife or other sharp instrument; *contused*, as when the flesh is torn or lacerated; and *punctured*, as when a nail or other pointed substance is thrust into the flesh. *Incised* wounds are the least dangerous and heal the quickest. If there is much bleeding, it should be arrested by making pressure with the finger upon the bleeding point. If there is a mere oozing of blood, the probabilities are that, as soon as the cut surfaces are brought closely together, it will stop.

The wound should be well cleansed with warm water, and then brought together and held in position by adhesive plaster. If the cut is very large, one or two stitches with a needle and thread may be necessary before the adhesive plaster is used. If the wound is painful, or if it swells and is red, it

should be dressed with a cloth dipped in a mixture of alcohol and water.

Contused wounds do not heal as readily as those that are made with a sharp instrument. They are apt to suppurate, the matter sometimes being profuse.

Wounds of this character, if severe, should receive medical attention at once; but in unimportant cases it will be sufficient to apply the alcohol and water dressing for a few days, after which, when matter forms, a simple ointment can be used to assist the healing process.

Punctured wounds should receive careful attention, for the reason that they sometimes give rise to lock-jaw. There is but little danger of lock-jaw following an incised wound; but in contused, and especially in punctured, wounds of the extremities, as the feet and toes, hands and fingers, such a result occasionally happens.

Punctured wounds should be thoroughly cleansed of all foreign substances, and kept constantly wet, either by the application of the alcohol and water dressing, or by a poultice that must not be allowed to become dry. This will keep the parts moist and soft, and permit of the escape of any matter that may be formed in the wound.

FROST-BITE.

From exposure to extreme cold, certain parts of the body are liable to be frost-bitten. The ears, nose, fingers and toes are especially liable to suffer.

If the parts are stiff and frozen when first seen, they should be bathed in very cold water until the circulation is re-established. After this the application of dilute alcohol (one part of alcohol to two of water) or spirits of camphor will be beneficial. If the surface becomes raw, it should be dressed with the oxide of zinc ointment, to which a little powdered camphor has been added.

During the winter season children often have *chapped hands* as a result of exposure to cold, raw winds. The chapped parts may be bathed with a mixture of glycerine and alcohol (two parts of the former to one of the latter), and afterwards dressed with calomel ointment or vaseline.

SORE EARS.

Infants while nursing may be troubled with sore ears, and some mothers have a prejudice against healing them, fearing that by so doing the child will be rendered liable to have disease of the brain. No fears of the kind need be entertained, and the ear trouble should be cured as soon as possible.

The disease commences at the back part of the ear where it joins the head, and involves both the ear and the skin behind it. Sometimes a crack or fissure forms, separating, for a little distance, the ear from the head. Thin matter exudes from the sore, and becoming dry, forms scabs which, when removed, leave a raw surface beneath.

The parts must be kept clean by bathing them with rain water, after which they should be carefully dried without irritating them. The calomel ointment may then be applied three or four times a day until a cure is effected.

LIME IN THE EYES.

Injuries to the eyes from this cause are very dangerous in their nature, as lime is a strong irritant, producing in some cases deep ulcers on the front of the eye-ball, which may destroy the sight.

If the patient is seen *immediately after the accident*, the eye should be bathed with a mixture of vinegar and water (a teaspoonful of vinegar to two tablespoonfuls of water), to neutralize the irritant qualities of the lime. The lids should be held apart, and the mixture dropped on the ball. The

parts around the eye should also be bathed with it. A few drops of sweet oil may then be dropped into the eye, and some rubbed on the adjacent skin. If any particles of lime remain in the eye they must be carefully removed, after which the parts should be bathed with warm water, and compresses wet with the same must be kept constantly applied until a physician can be secured to take charge of the case.

CHAPTER XXII.

Accidents and Injuries

(*Continued*).

DROWNING.

COMPLETE submersion of a person in water is usually sufficient to cause death in two minutes. Cases, however, have been recorded in which life was restored after the body had lain in water for a much longer time. If a person faints, thereby causing a temporary suspension of respiration, before being submerged, he may remain in the water several minutes without total extinction of life.

Unless the body is known to have been under water for a half hour or more, efforts should be made, according to the following directions, to restore life.

Medical assistance, blankets and dry clothing should be sent for without delay; but those present must immediately proceed to restore breathing by the following means. No crowding should be permitted, and the body must not be allowed to remain on the back unless the tongue is secured and drawn forwards.

After the patient's mouth has been wiped dry, he should be placed with his face downwards and his forehead raised, so as to let the fluids escape from his mouth.

In this position the tongue will fall forward, permitting the air to enter the windpipe.

To Excite Breathing.—Turn the patient on his side, at the same time supporting his head, and excite the nostrils with snuff, hartshorn, or smelling salts, if they are at hand, or tickle the throat with a feather. Rub the face and chest briskly, and dash cold water, or cold and hot water alternately, on them. If these means are unsuccessful, proceed without delay in the following manner:

Place the patient on the back on a flat surface, inclined a little upwards from the feet; raise and support the head and shoulders on a small firm cushion or folded article of dress placed under the shoulder-blades. Cleanse the mouth and nostrils, draw forward the patient's tongue, and keep it projecting beyond the lips; an elastic band over the tongue and chin will answer this purpose, or a piece of string or tape may be tied around them. Remove all tight clothing from about the neck and chest, especially the braces.

To Imitate the Movements of Breathing.—Standing at the patient's head, grasp the arms just above the elbows, and draw them gently and steadily upwards above the head, keeping them in that position for two seconds. By this means the air is drawn into the lungs. Then turn the patient's arms down and press them gently and firmly for two seconds against the sides of the chest. By this means air is pressed out of the lungs. Repeat these measures alternately, about fifteen times a minute, until a spontaneous effort to respire is perceived, immediately upon which cease to imitate the movements of breathing and proceed to induce circulation and warmth.

Treatment after Natural Breathing has been Restored.—To promote warmth and circulation, wrap the patient in dry blankets, commence rubbing the limbs upwards, with firm grasping pressure and energy, using handkerchiefs, flannels, etc. By this means blood is propelled along the veins towards the heart. The friction must be continued under the

blanket or over the dry clothing. Promote the warmth of the body by the application of hot flannels, bottles, or bladders of hot water, heated bricks, etc., to the pit of the stomach, the arm-pits, between the thighs, and to the soles of the feet.

On the restoration of life, a teaspoonful of warm water should be given; then, if the power of swallowing has returned, small quantities of wine, warm brandy and water, or coffee, should be administered. The patient should be kept in bed and a disposition to sleep encouraged.

In all cases that give any hope of recovery, the above treatment should be persevered in for some hours, as success may sometimes be secured after a long trial.

INTERNAL POISONS.

All substances that are poisonous should be carefully kept out of the reach of children. It is safest to keep them in a chest or drawer securely fastened. Yet, in spite of the greatest caution to prevent such an occurrence, cases of poisoning will sometimes happen, requiring prompt and effective treatment. A physician should be sent for, without delay, in all cases, and until he arrives the mother should adopt such measures as are immediately demanded.

In nearly every case the first thing to do is to remove the poison from the stomach by means of an emetic. Perhaps the most useful emetic within a mother's reach, and one that is quite harmless in all cases, is composed of a large teaspoonful of strong ground mustard mixed with half a teacupful of water. This should be forced down the patient's throat without delay. Warm water should be used if it can be had without waiting, but if it is not at hand cold water will answer. Water should be heated as soon as possible and given to the child freely, to encourage vomiting. Tickling the back of the throat with a feather or the finger will also assist in producing vomiting.

If no ground mustard is at hand, salt and water may be tried. A teaspoonful of powdered alum mixed with a tablespoonful of molasses or water will sometimes produce quick vomiting, and is perfectly safe. A teaspoonful of the wine of ipecac, or a tablespoonful of the syrup of ipecac, constitutes a safe and reliable emetic, but it is rather too slow in its action to suit cases of poisoning by drugs that are readily absorbed. The vomiting should be kept up until the stomach is thoroughly emptied of its contents. The above directions apply to all cases of poisoning that are likely to occur in a family.

After the stomach is rid of the poison, it will, in many cases, be necessary to follow up the treatment by the administration of antidotes. This, however, will be alluded to when treating of each separate poison.

Acids, such as *oil of vitriol* and *aqua fortis*, destroy life through their corrosive qualities. They burn the parts with which they come in contact, and thus produce inflammation. The chemical antidote is an alkali (such as common baking soda) in water. Soap also answers a good purpose. Oil, milk, and plenty of water, or slippery-elm water, should be given. As vomiting is one of the results of the irritant action of the acid on the stomach, emetics should not be given, for they would not only be unnecessary, but would increase the trouble. All such cases should receive skillful medical treatment.

Ammonia, or *hartshorn*, when taken in large quantities, produces inflammation of the stomach. The chemical antidote is vinegar, which should be administered if the case is seen soon after the ammonia has been taken. Copious draughts of water should also be given to lessen the corrosive action of the poison. Slippery-elm water, on account of its mucilaginous qualities, is very useful in these cases.

Sulphate of zinc, or *white vitriol*, in large doses, is poisonous by reason of its irritant qualities. The treatment consists in giving warm water to encourage vomiting, after which milk with white of eggs should be freely administered. An infusion of green tea should be given as a drink.

Poisoning by *belladonna*, or *deadly night-shade*, is sometimes caused by children eating the berries of the plant. The whole plant—berries, leaves and root—is poisonous, and should not be allowed to grow about the house or grounds.

Having sent for the nearest physician, the mother will proceed in the same manner as if it were a case of poisoning by opium. An emetic, to produce prompt vomiting, which can be encouraged by copious draughts of warm water, should be given at once. The child must not be permitted to sleep, but should be kept awake by the application of ice, cold-water sponging, and other measures, until the arrival of a physician.

Camphor, in large doses, is an irritant poison, giving rise to faintness, giddiness and delirium, passing, in some cases, into drowsiness and convulsions, with cold, clammy skin.

Emetics should be freely given to rid the stomach of the camphor, after which stimulants, such as wine, may be administered. When properly treated, most cases will recover.

Corrosive sublimate is sometimes kept in houses, in the form of a solution in alcohol, for the purpose of destroying bed-bugs. It is a deadly corrosive poison, requiring but a small dose to destroy life.

Unless free vomiting has already occurred, the first thing to do, in cases of poisoning from corrosive sublimate, is to administer a quick emetic, after which the white of eggs should be freely given to the patient. If no eggs can be obtained quickly, recourse may be had to a mixture of flour and water. For the intense thirst it is best to give milk at frequent intervals, or else the patient can drink slippery-elm water.

Persons who have been poisoned by corrosive sublimate suffer greatly, and, of course, medical advice should be secured as soon as possible.

Jimson weed is found growing in many waste places in this country. It is a narcotic poison, and children have often been poisoned by eating its leaves or seeds.

The treatment is the same as that recommended for poisoning by opium and belladonna.

Arsenic is often used to destroy rats and for other purposes. Being sometimes kept in a dresser or cupboard containing soda, it has been mistaken for the latter article and used in making bread. When arsenic has been swallowed, the patient must be vomited without delay. The emetics before recommended can be used until free vomiting has been produced. After the stomach has been thoroughly emptied of its contents by an emetic, or by the irritant action of the poison itself, fresh milk and the white of eggs should be given. For the thirst, which is usually very great, the patient should drink water in which slippery-elm bark or sassafras pith has been placed. Most cases that do not prove speedily fatal will assume a chronic form, and require the care of a skillful physician.

Paris green, so often used in destroying the potato-bug, is a preparation of arsenic; and cases of poisoning from this article should be treated according to the directions above given.

Oxalic acid is sometimes kept about houses for bleaching purposes. From its resemblance to Epsom salts it has often been mistaken for that article.

In the treatment of poisoning from oxalic acid, an emetic should be given, unless vomiting has already taken place. After the stomach has been cleared of the poison by vomiting, chalk or magnesia suspended in milk or water should be freely given. The patient should also drink of mucilaginous fluids, such as slippery-elm water.

Poisoning by opium and its preparations not infrequently occurs. Of the various preparations of opium, laudanum is most commonly used; and as a consequence, poisoning by this article is not so very rare.

If a child is known to have swallowed laudanum, or any other mixture containing opium, in poisonous quantities, an emetic should be given without delay. Mustard and water, salt and water, alum, or ipecac, should be given in large doses to insure speedy vomiting. Physicians often prescribe in these cases, because of its prompt action, fifteen to twenty grains of white vitriol in two or three tablespoonfuls of water. If, however, the more simple emetics, as mustard and water, produce the desired effects, they should be preferred, as the white vitriol may cause unpleasant results. After free vomiting, strong coffee should be given liberally, and every effort made to keep the child awake until the arrival of a physician. If allowed to go to sleep he will not likely wake again. He should be walked or carried about in the open air, and his head and face sponged with cold water. If ice can be had, it should be rubbed over his forehead, face and neck. If necessary, he can be plunged for a few seconds into a warm bath, and then into a cold one. By perseverance he may be kept awake in many cases until the effects of the opium wear off, when he will be safe.

Phosphorus is contained in the preparation known as "Rough on Rats." It also forms a part of the common lucifer match. Poison from either of these articles is usually the result of an attempt to commit suicide.

After the stomach has been cleared of its contents by a quick emetic, large doses of calcined magnesia mixed with water should be given He should also drink freely of slippery-elm water or other mucilaginous fluids. These cases are often somewhat protracted in their course, and require intelligent and skillful treatment.

Tartar emetic, in large doses, is an irritant poison, producing inflammation of the stomach and bowels. The treatment consists in encouraging free vomiting by giving large quantities of warm mucilaginous drinks. The proper antidote is a strong infusion of green tea, which should be frequently given. After the acute symptoms have subsided, it will be well to apply mustard to the stomach, bowels and extremities, and give wine freely.

EXTERNAL POISONS.

Poison Ivy.—The skin of most persons is very liable to become poisoned by contact with the *poison ivy*, or *rhus toxicodendron.* While some persons can handle this vine with perfect impunity, others cannot go near it, especially at night-fall, without being severely poisoned.

The characteristic symptoms of poisoning by the ivy are inflammation and swelling of the skin, with a vesicular eruption. The vesicles may be small or quite large. Intense burning and itching distress the patient, causing him to rub the parts, with the effect of rupturing the vesicles and increasing the inflammation.

For several years after an attack the disease is prone to recur at the same season without fresh exposure.

The disease is often spread by the patient rubbing the diseased surface and then touching other parts of his body. He should, therefore, be instructed to wash his hands immediately after handling the affected parts.

Treatment.—The poisoned surface should be thoroughly bathed several times a day with a solution of white vitriol (a teaspoonful to a pint of water), and after the parts have been dried, they should be dressed with oxide of zinc ointment. If the solution of white vitriol does not produce beneficial results, it may be discontinued, and a sugar of lead wash of the same strength can be used. Sometimes the itching is

greatly relieved by bathing the affected parts with hot water, to which a small portion of alcohol has been added.

When the inflammation is severe and the skin is raw, it is best to use a warm, moist poultice made of flaxseed meal or other mucilaginous article. The poultice must be kept wet with hot water, to which a small portion of sugar of lead has been added, and should be applied at night, while other remedies can be used during the day-time.

As the disease begins to yield to treatment—the inflammation and itching subsiding—the poultices and wash can be omitted, and the parts dressed with oxide of zinc ointment until they are thoroughly healed.

POISONOUS INSECTS.

The sting of a honey-bee, bumble-bee, hornet, yellow-jacket, or wasp may cause alarming symptoms in a child. These stings produce a wound which is instantly followed by a sharp, itching pain, with an inflammatory swelling. At the site of injury the skin is elevated and pale. If the patient is very susceptible to the influence of the poison, the symptoms may become alarming, and consist of dimness of sight, vertigo, nausea, palpitation, and a feeling of oppression, with a disposition to swoon. I have known bees to sting the mouth and throat of persons who were eating honey gathered in the woods at night. Like injuries have been received by persons carelessly drinking cider in which bees were floating.

Treatment.—The wound should be carefully examined to ascertain if the sting is left in the skin, and if so it must be removed. The parts should then be thoroughly bathed with spirits of hartshorn to which a little water has been added, or, if that is not at hand, any of the following remedies can be used: salt water, alcohol, spirits of camphor, or a strong solution of baking soda in water. If the insect has passed

into the throat or stomach, an emetic of mustard and water should be given to dislodge it. If the throat is inflamed from the sting, a gargle of alcohol, one part to two parts of warm water, should be used. If the patient suffers to any great extent from the shock—becoming cold with a feeble pulse and general depression of the system—it will be necessary to stimulate him with wine or whiskey.

SNAKE BITE.

The principal poisonous snakes in the United States are the rattlesnake, the water-moccasin and the copperhead: The symptoms produced by the bites of these reptiles vary in proportion to the amount and virulence of the poison received into the system. Sometimes a person is bitten through the clothing, and but little of the poison reaches the flesh. Hence we find that the bite of the most venomous snake does not always kill, and in some cases complete recovery takes place in a short time after being bitten. Children, owing to their lack of vitality as compared to adults, are more apt to die from the effects of snake bite than the latter.

A person bitten by a venomous snake will immediately feel great pain in the part, followed in a short time by swelling, which rapidly increases, the affected parts assuming a mottled appearance. If a finger or a toe be bitten, the swelling soon extends to the body, producing a feeling of numbness, weight and coldness, with other symptoms. The general system is speedily affected; the patient becomes sick at his stomach, and perhaps vomits. He sees objects indistinctly, and has frequent swooning fits, with coldness and clamminess of the body. The thirst is intense, the breathing is oppressed, and the mind wanders. Such are the leading symptoms attending fatal cases; but oftentimes some of these symptoms are greatly modified, and although

the pain and swelling may be considerable, yet after awhile they begin to subside, and the patient gradually recovers.

Treatment.—In some cases, before the arrival of a physician, much good can be accomplished by proper treatment. If the bite be upon one of the extremities, a cord should be put around the limb above the wound and securely tied. Then with a sharp knife the flesh around the wound should be cut away. Bleeding should be encouraged, with a view of carrying off any poisonous matter that may be in the wound.

Alcohol or tincture of iodine should be freely applied to the wound, after which it can be dressed with cloths dipped in warm water to which an equal part of alcohol has been added.

Internally, whiskey, or, if this is not at hand, alcohol diluted with water (one part of alcohol to two of water) should be freely given, so as to produce slight intoxication, which should be kept up for several hours.

FOREIGN BODIES IN THE EAR.

Various substances are liable to get into the ear, either by accident or design, the most common being grains of coffee, corn, peas, beans, cherry-stones, as well as bugs and other insects. The effects of such accidents vary according to the nature, size, and shape of the foreign body. If a grain of corn, or similar substance, remains in the ear for a few days it will swell and become larger, thus causing increased difficulty in its extraction. A smooth substance gives less pain than a rough one, while bugs and other living insects cause the greatest distress by their movements and the buzzing sounds they make.

Treatment.—If the substance is small and relatively heavy, the patient can be laid on his side with the affected ear below, and the head quickly shaken with a view of dis-

lodging the intruder, so that it will, by its gravity, drop out.

If the foreign body be alive, the child should be placed on its side with the sound ear below, and warm sweet oil or melted lard poured into the affected ear, for the purpose of killing the insect and preventing its further movements. If the insect be small, it will float on top of the oil, where it can be seen and easily removed.

Failing to remove a foreign body in this manner, however, recourse must be had to syringing the ear with warm water. To do this properly the syringe should hold about four ounces of water and have a long slender nozzle, which should be introduced to a sufficient depth to enable the stream to pass by the side of the object to be removed. The operator should seize the lobe of the ear and draw it upwards and backwards, so as to straighten the canal, and then introducing the nozzle of the syringe, he should push the piston with sufficient force to dislodge the intruder. If a large syringe is used, the piston must not be pushed too forcibly, as rupture of the ear-drum might result. During the operation the patient should sit up in a chair with his head slightly inclined to the affected side, to favor the expulsion of the foreign body. A large white cloth or paper should be laid on the floor beneath the patient, so that an examination of the discharge from the ear will reveal whether the substance has been removed or not.

If these measures fail of success, it will be necessary without delay to take the child to a surgeon for treatment.

Foreign Bodies in the Eye.

Different substances, such as dirt, ashes, lime, barley-beards, gnats, and other small insects are liable to get into the eye, causing pain and inflammation. They are usually imbedded under one of the lids, but occasionally they may be found adhering to the eye-ball.

Treatment.—The foreign body should be removed as soon as possible, after which warm water must be constantly applied until the inflammation has subsided. Standing behind the patient, who is seated in a chair facing a good light, the operator raises the eye-lid and tells the patient to move the eye about in different directions, so as to expose all parts of the eye-ball. Any foreign substance that can be seen lying loosely on the eye-ball, or under the lids, can be easily removed with the corner of a silk handkerchief or a fillet of paper. If the substance be a barley-beard, or anything that adheres closely to the parts, it will be necessary to use a pair of small tweezers to effect its removal.

When small particles of steel, glass, or other sharp articles are driven into the eye-ball, and cannot be extracted in the above manner, it will be necessary, without delay, to take the patient to a skillful surgeon.

After the foreign substance has been removed, frequent bathing of the eye with warm water, and the application of compresses dipped in the same, will soon restore the organ to a healthy condition.

FOREIGN BODIES IN THE AIR-PASSAGES.

Foreign bodies of various kinds occasionally enter the air-passages, giving rise to the most serious symptoms. Of the many articles that are liable to become impacted in the windpipe of children, small coins, buttons, cherry-stones, melon-seeds, and grains of corn are the most common. After once entering the air-passages the substance, if it is of any size, will usually be arrested in the larynx. If small, and especially if heavy, it is liable to pass through the windpipe and lodge in one of the large bronchial tubes—usually the right one. Sometimes a foreign body, such as a grain of corn, or a melon-seed, passes through the larynx and remains loose in the windpipe be-

low, being carried upwards and downwards with each act of respiration.

When a foreign body enters the air-passages, it immediately produces a great deal of distress and paroxysms of severe coughing. The patient gasps for breath, clutches his throat, coughs violently, while froth, or froth and blood, escapes from his mouth and nose. These symptoms may continue for a few seconds only, or they may last for hours. If the foreign body remains in the larynx the acute symptoms will continue; but if it drops into the windpipe below, some temporary relief may follow. The paroxysms of coughing and difficult breathing will return, however—permanent relief being obtained only by expulsion or removal of the offending substance. In some cases the symptoms are not at all urgent, the patient complaining of but little inconvenience, and it may be difficult to determine whether there is really a foreign substance in the air-passages or not.

A foreign body may be expelled by coughing soon after it has entered the windpipe, or expulsion may take place in this manner weeks or months afterwards. Cases have been recorded where a foreign substance, after remaining in the air-passages for a year, was finally expelled by coughing.

Recovery does not always take place after the expulsion or removal of a foreign body, for, before its removal, it may have caused enough irritation and ulceration of the windpipe and bronchial tubes to produce death.

When buttons, coins, or other metallic substances get into the air-passages they are rarely expelled by natural efforts. The surgeon will, in nearly all such cases, be compelled to open the windpipe to remove them. When, however, a green melon-seed or like mucilaginous substance enters the air-passages, the probabilities are that after awhile it will be expelled by the patient while coughing. Several weeks, however, may elapse before the child coughs it up.

Treatment.—Although a surgeon should be summoned in all cases, yet before his arrival efforts to relieve the child should be made by those present. The patient should be suspended by the heels, or his body can be securely held on a bed or table with his head inclined downwards. While in this position his chest and back should be sharply and repeatedly struck with the hand in order to dislodge the substance from the windpipe. This operation should not be continued too long at a time. In fact, in some cases, inversion of the body adds so much to the danger of suffocation that it cannot be safely practiced. Snuff, and similar articles, can be applied to the nostrils to induce sneezing, which sometimes aids in the expulsion of the foreign body. These means failing, the case will pass into the hands of the surgeon, who may be compelled to open the windpipe before relief can be obtained.

FOREIGN BODIES IN THE NOSE.

Children not infrequently place into the nose, as a matter of amusement, such articles as grains of corn, peas, beans, buttons, fruit stones, etc. If they remain in the nose long they always produce inflammation and ulceration, attended with an offensive discharge. When an accident of this kind happens to a child, the mother always becomes greatly excited, and usually makes fruitless attempts to extract the foreign body, with the effect of pushing it still further into the nostril.

Treatment.—The accident is unattended with danger to life, and relief can be obtained easily by proper procedure. Sometimes a pinch of snuff, placed in the nostril to cause sneezing, while the other nostril is closed, will be sufficient to expel the intruding substance.

With a piece of small annealed wire bent upon itself in such manner as to form a curved loop at one end, small

enough to enter the nostril, these substances can usually be extracted without difficulty. The wire should be pushed gently backwards and upwards until the loop is above and behind the foreign body, after which the loop should be depressed so as to get behind the substance, which can then be readily pulled forward out of the nostril.

CHOKING.

A child may fill its mouth so full of meat, or other article of food, that in attempting to swallow it he becomes choked. Ordinarily the trouble is soon overcome, but I have known death to speedily follow choking by large bits of meat. As soon as possible a finger should be inserted into the child's throat, and if the substance be within reach it should be hooked out at once. If it can be digested, and is too far down the throat to be removed by the finger, it should at once be pushed downwards until it reaches the stomach. If the child be choked on any article that is not proper to be swallowed, and if it is impossible to remove it, the back of the throat should be tickled with the finger, or a feather, until vomiting occurs, when the substance will usually be discharged.

ACCIDENTS FROM LIGHTNING.

A person struck by lightning may be killed outright, or he may remain insensible, with slow respiration, scarcely perceptible pulse, and dilated pupils, for periods varying from a few moments to an hour or longer. The latter condition may be followed by complete recovery, or there may remain paralysis of the limbs (usually the lower), and derangement of the special senses, the patient losing his power of speech, sight, or hearing. The paralysis may be permanent, but in many cases it disappears after a time, and even the special senses may return to their normal condition.

Other affections that may be caused by lightning are burns, eruptions on the skin, loss of hair over parts of the body, wounds, and hemorrhage from the mouth, nose, or ears.

Lightning is apt to be attracted by any metal worn about the body. Watch chains have been broken and melted, and by the intense heat of these metallic conductors the clothing has been set on fire.

In some cases the clothing is torn and burnt to a great extent, and strong boots have been burst open or thrown off the feet to quite a distance.

The treatment of shock from lightning consists in arousing and keeping up the circulation and respiration. Dashing cold water over the body, combined with friction and warmth to the extremities, and the injection of whiskey or brandy into the bowels, may aid nature in overcoming the shock to the nervous system.

Irritating the mouth and nose with the fumes of spirits of hartshorn, and, in some cases, artificial respiration as directed in cases of drowning, may be useful.

The patient should have plenty of fresh air, and persons should not be permitted to crowd around him.

Burns that have occurred upon the body should be treated according to the directions given in the article on that subject.

CHAPTER XXIII.

Miscellaneous Diseases.

VACCINATION.

AS small-pox is extremely fatal in infantile life, it becomes especially necessary to guard young children from an attack of the disease. If convenient, every healthy child should be vaccinated at an early age. When small-pox is prevailing in the neighborhood, an infant should be vaccinated when a few days old; but if there is no immediate cause to fear an attack of the disease, the operation should be deferred in healthy infants until they are four to six weeks old; and if the child be weakly, it is best to postpone the vaccination a month or so longer. In small towns and in the country, it is often difficult to obtain a good article of vaccine virus, and children living in such places are usually not vaccinated until later in life.

Unless the danger of exposure to small-pox is great, no sick or very unhealthy child should be vaccinated. It is best to wait until it has recovered its health, or has sufficient strength to withstand, without danger, the sickness to which vaccination gives rise. Of course, where the child has been exposed to small-pox, or when the surroundings are such that exposure to the disease may occur at any time, it is proper to protect it by vaccination without delay.

The selection of the vaccine virus is of great importance. There are two kinds: the bovine, or animal, and the human

virus. It is claimed for the animal virus that by its use there is no danger of inoculating the system with other diseases, as scrofula, syphilis, etc., and that it affords better protection against small-pox than does human virus.

But if the virus be taken from a healthy infant, in whom the vaccine disease ran its regular course, without any complications whatever, there need be no fears of inoculating the child with other diseases. Besides, if the virus is not too far removed from the animal product, it is just as efficacious as the latter. The objection to virus taken direct from the animal is that it sometimes produces great swelling and inflammation of the arm, with a high grade of fever. The best virus is that which has been obtained from the calf and afterwards humanized by passing it through the systems of a few healthy children.

Vaccination is best performed when the lymph is taken directly from the vaccine sore on the sixth, seventh or eighth day, and used immediately. But as this can seldom be done, lymph that cannot be used within a few hours should be stored in hermetically-sealed .tubes, or on points thickly coated with it, and kept constantly protected from damp and heat. When used, the points of lymph should be dipped in water and laid on a piece of glass until the matter is soft enough to use.

Vaccination is usually practiced in this country from the crust that falls off from a vaccine sore. The first crust produced by the sore is the only one that is fit to use. It should be kept dry and cool, and may be enclosed in a piece of white wax to protect it from the air. When used, the edges and top of the crust should be carefully trimmed away, so as to expose the inside portion, a small fragment of which is placed upon glass and a drop of water added, and intimately mixed with the virus. The arm being slightly scarified, or scratched, until it is raw, but not bleeding, the mat-

ter is taken from the glass on the point of a lancet or small knife and placed on the raw surface and left to dry. After the arm is thoroughly dry, a small piece of court-plaster can be put over the sore to prevent the clothes from rubbing it.

If considerable fever arises as a result of the vaccination, a mild purgative may be administered, and the diet of the child restricted to the mildest articles.

Sometimes from rubbing and irritating the parts a troublesome sore is produced on the arm, and the glands in the arm-pits become swollen and painful. This, together with the inflamed and painful condition of the arm, calls for special treatment. The sore should be enveloped in a warm, moist poultice, which should be changed frequently. Each time the poultice is changed the arm should be bathed with a mixture of warm water and alcohol. After the inflammation and swelling subside, the sore can be dressed with the oxide of zinc ointment until it has healed.

PURPURA.

This is a disease in which extravasations of blood take place into the skin and in the substance of different organs. Hemorrhage may also occur from mucous surfaces, and into the various cavities of the body. When the extravasations take place into the skin only, the disease is called *simple purpura;* when the hemorrhage is more general, the blood flowing from the nose, mouth, bowels, etc., it is known as *purpura hemorrhagica.*

Purpura is sometimes met with in children, and may be caused by insufficient food, by food of a poor quality, and by bad hygienic surroundings. The disease may be due to heredity, to valvular disease of the heart, or it may follow exhausting diseases of various kinds. In some cases it is impossible to ascertain its cause.

In simple purpura the spots may appear without previous signs of ill health. Usually, however, before the appearance of the extravasations, the child complains of aching in the limbs; it has slight fever with thirst, and its digestion is impaired. The spots are circular in shape, and are of a brick red or dark purplish color. In size, they vary from a pin's head to the diameter of half an inch or more. Sometimes they are accompanied by marks that look like bruises, which are due to extravasation of blood into the tissue beneath the skin.

In *purpura hemorrhagica* the effusion of blood is not confined to the skin and the tissue beneath it; but it may occur from the nose, the gums, the stomach, the bowels, the kidneys, or from other parts. If hemorrhage proceeds from the bowels the blood is passed in the form of dark clots, which are deposited in the bottom of the vessel. The joints may be the seat of pains and considerable swelling, often leading to the supposition that the patient has rheumatism.

In severe and protracted cases the child becomes weak, the ankles and face may be swollen or puffed, and sometimes convulsions take place, due to effusion of blood into the ventricles of the brain.

The disease varies greatly in its duration, but if properly treated it usually ends in recovery.

Treatment.—Rest in bed is important in the management of purpura. When the disease comes on suddenly in an otherwise healthy child, purgative medicines, such as syrup of rhubarb, or syrup of rhubarb and senna, or castor oil, to which a few drops of turpentine have been added, will be beneficial. In the hemorrhagic form Fowler's solution of arsenic with the tincture of perchloride of iron will be useful. The fluid extract of ergot with gallic acid has also been used with benefit, but these remedies should be prescribed by a physician only.

When the child becomes weak from loss of blood, port wine or some other stimulant should be administered, and milk and other nourishing articles of diet must be given.

The gums of a child suffering from purpura must not be lanced; and before performing such an operation on any child the physician should examine its body to see if any purple spots be upon it. Neglect of this precaution may sometimes result in serious consequences.

BLEEDING FROM THE NOSE.

Bleeding from the nose may be caused by congestion of the blood-vessels of the head, by blows or other injuries on the nose or forehead, or by a disordered condition of the blood, as in *purpura* and other diseases.

When there is congestion of the blood-vessels of the head, accompanied with headache, bleeding from the nose, unless excessive, is beneficial and ought not to be interfered with. When it proceeds from other causes it should be arrested without delay. The bleeding rarely proves fatal unless it happens in a patient who is affected with *purpura hemorrhagica.*

Persons who drink large quantities of milk daily are, owing to the rapid formation of blood, sometimes affected with bleeding from the nose. I have sometimes, under such circumstances, been compelled to advice the patient to abstain from the use of milk before the bleeding could be permanently controlled.

Treatment.—Sometimes pressing both sides of the nose together with the thumb and fore-finger will arrest the bleeding. This must be continued for a long time. If ice be at hand, a piece of it can be enveloped in a fold of flannel and applied to the forehead and to the sides of the nose, changing it occasionally from one position to another, for it should not be applied too long at one place. If no ice can be had,

a cloth dipped in cold water can be used in its stead. Ice or cold cloths to the nape of the neck should be tried. If the child is old enough to do so, it should snuff up the nostrils a little tannin or powdered alum. If these measures fail, the hands and arms of the patient can be plunged into cold water for a few minutes, and then held up high above the head, and kept in that position for some time. If the bleeding still continues, a surgeon must be called, who will, if the hemorrhage be dangerous, proceed to plug the nostrils—an operation that is free from danger and easily performed.

EAR-ACHE.

This painful affection is commonly caused by exposure of the child to a draught of cold air.

The pain usually depends upon a catarrh or inflammation of the middle ear and the little tube that leads from it to the throat. The trouble ordinarily begins as a slight cold; the child is somewhat feverish and restless, moving its head about uneasily on the pillow. It becomes fretful, looks distressed, and cries in a piteous tone. Occasionally it has fits of violent screaming, causing much alarm to the mother, who often concludes that her child has brain disease. The cry that accompanies ear-ache is peculiar, and once heard can be recognized afterwards. The child sleeps for a short time, and awakes suddenly in a fit of violent crying.

To detect ear-ache, the mother should wait until the child ceases crying and has become quiet. Then gently placing her finger on the ear-tube, she should make slight pressure. If the ear be inflamed, and the seat of the pain, the child will immediately scream out in great agony. If it does not seem to mind the pressure, the other ear must be tried in the same manner. If pain is not produced by pressure on either ear, the trouble is elsewhere.

Many cases of ear-ache caused by exposure to cold soon recover under judicious management. Occasionally, however, the inflammation is followed by the formation of matter in the ear, and by impairment of the child's hearing. Therefore, if the ear-ache does not yield to treatment in a reasonable time, medical advice must be obtained.

Treatment.—If the child is feverish, and the bowels somewhat constipated, a dose of syrup of rhubarb or castor oil should be given. A little sweet oil, as warm as can be well borne, may be dropped into the ear, and confined there by a small piece of cotton placed in the tube. But the main treatment consists in applying warm compresses, or poultices, to the side of the head, large enough to thoroughly envelop the ear.

An excellent application is made by using a small flannel sack filled with wheat bran, which, after being dipped into hot water, should be gently squeezed and placed on a pillow that has been covered with a piece of oil-silk or oil-cloth. The child's head can then be laid on the sack, so that the affected ear shall be kept constantly pressed against the warm bran.

If wheat bran cannot be had, any good hot poultice will do, as heat and moisture are the principal factors in the relief of the pain. Of course, after using the warm applications (which should be kept up until the pain ceases), care must be observed to prevent the child from taking cold after their removal. This can be done by keeping it in a comfortable room for a day or two, and if it then becomes necessary to change rooms, the head can be protected by a light covering.

Incontinence of Urine, or Wetting the Bed.

Incontinence of urine, or an inability to control the action of the bladder, is an infirmity from which children not infrequently suffer. The complaint may exist in either sex,

and is often very difficult to cure. Indeed, in some cases, the affection continues up to the period of puberty. Although the disease may exist during the day, yet it is more apt to occur in the night, causing the child to wet its bed while sleeping.

Ordinarily the trouble begins as the result of some derangement of the system. Worms in the lower bowel may give rise to it. A highly acid condition of the urine, producing irritation of the bladder, may cause it. In other cases it depends upon some disorder of the stomach and bowels. Often the cause of the disease cannot be ascertained. After awhile a habit of wetting the bed is established, which is exceedingly hard to overcome, even after the general health has been fully restored.

In rare cases there is an entire lack of control over the bladder in the day-time, the urine constantly dribbling from the child, or the desire to pass water is felt at short intervals, and the patient is unable to resist it even for a minute. These severe cases occur more frequently in girls than in boys, and are exceedingly troublesome, and hard to cure.

The treatment of children addicted to wetting the bed requires a great deal of care and attention on the part of the nurse. The quantity of drink taken at the last meal and before bed-time must be limited. The bladder must be emptied before the child goes to bed, and once or twice during the night it should be aroused from sleep to enable it to void its urine. To prevent it from lying on its back while sleeping, it is best to give it a soft bed and a hard pillow. The diet should be mild, but nourishing, and taken in quantities not too large at a time. Plenty of exercise in the open air should be taken, for the purpose of giving tone and strength to the system.

The treatment of this infirmity by medicines should be conducted by a physician only, as the remedies ordinarily

used are dangerous unless given in proper doses and at suitable intervals.

WARTS.

Small growths, called warts, are often found seated on the skin, causing considerable inconvenience and disfigurement. That warts have a direct relation to the nervous system is shown by the fact that they sometimes disappear under the influence of mental emotion, which accounts for the supposed efficacy of certain charms in their cure.

Warts are usually situated on the hands, but they may exist on other portions of the body. They may be single, or several may be joined together, forming clusters. A wart may sometimes be mistaken for a cancer of the skin (epithelioma), but in the latter disease there is pain, or a burning sensation in the part, and infiltration or swelling in some of the glands lying near it.

Treatment.—After paring away the outer layer of the wart, a drop or two of strong acetic acid can be placed on it with a pointed stick. This application can be repeated daily until the wart disappears. Chromic acid is also a valuable agent in the destruction of these growths. After shaving off the outer or hard portion of the wart, a little chromic acid can be applied and allowed to remain for a minute or two. This will usually accomplish the desired purpose without producing a troublesome sore. Tincture of iodine or spirits of turpentine will sometimes, after repeated applications, remove warts.

The stronger caustics, such as nitric acid, will speedily destroy warts; but their use will often be followed by troublesome and painful sores.

CHAPTER XXIV.

Miscellaneous Subjects.

DISINFECTANTS.

IN cases of small-pox, cholera, scarlet fever, diphtheria, typhoid fever, and other contagious and infectious diseases, much can be done to arrest their spread by means of thorough disinfection. When a case of such disease appears in a house the following precautions should be taken. The patient ought at once to be removed to a suitable room—preferably an upper one—and isolated from other persons except the nurse. The room should be large and airy, capable of being properly ventilated, and should contain no extra furniture, carpets, curtains, or other article not needed for the patient's welfare and comfort.

By placing a piece of oil-cloth under the sheet or blanket upon which the patient rests, the bed will be protected from any discharge that may escape from his body.

The room should be kept clean, but before being swept the floor must be sprinkled with some disinfecting solution. An open fire-place permits the foul air to escape from the room, and fresh air can be admitted through the window without a draught by the following arrangement. Raise the lower sash three inches, and fit a board accurately in the window at the bottom of the raised sash. This will prevent any draught, and at the same time permit the air to enter the room at the point where the upper and lower sash meet.

All articles from the bed and the patient's body, after being soiled, should be submerged in a disinfecting solution, after which they must be washed separately, and not mixed with the general household articles. A disinfectant should be placed in the vessels in which the discharges from the bowels are received, and such discharges must be removed from the room and buried in the ground far away from any well or cistern.

All handkerchiefs or rags used to cleanse the patient's mouth or nose must be burned soon after being soiled.

Basins containing water into which some disinfectant has been placed should be handy, and the nurse and others must wash their hands in it after handling the patient.

No articles of food or drink from the sick-room should be consumed by others.

No visitors should be admitted to the sick-room except in cases of necessity.

When a patient recovers and is considered free from infection, or, in case of death, after the removal of the body, the room and its contents must be thoroughly cleansed and disinfected. The ceilings and walls should be scraped and whitewashed.

The bed-clothes and wearing apparel must be thoroughly disinfected before removal from the sick-room, after which they should be boiled and washed. Beds, pillows and other articles which are intended to be used must be soaked in a disinfectant fluid, after which they should be dried on the roof of the house or in an empty room.

All articles of filth and refuse must be removed from the premises, and disinfectants freely used. Cellars, garrets, sleeping rooms and other apartments should be thoroughly aired during the day-time.

Children living in houses in which there is a case of contagious disease must not be allowed to attend school.

In cleansing the body of a corpse a solution of chloride of lime, one pound to a gallon of water, may be used. The whole body should be washed with this solution. All cloths, sponges, etc., used about the dead body must be burned. Under the hips of a corpse may be placed a large layer of cotton batting, well soaked with the chloride of lime solution, to absorb any discharges that may flow from the body.

Persons dying of infectious diseases should be buried soon after death.

HOW TO USE DISINFECTANTS.

Quicklime.—This agent is used to absorb moisture and putrid fluids. It is also used to whitewash walls after sickness from infectious diseases.

Chloride of Lime.—This destroys putrid effluvia and arrests putrefaction. Plates containing chloride of lime can be placed about the room occupied by a person with infectious disease. When used to destroy foul odors in cellars or close rooms, pour strong vinegar on it, so as to release the chlorine contained in it. When vinegar is used it will be necessary occasionally to add fresh chloride of lime to the mass.

Copperas.—This is used to disinfect drains, sewers and places and grounds where discharges from patients with cholera, typhoid fever, etc., are placed, as privies and cesspools. For this purpose copperas is superior to carbolic acid, but it must be remembered that it discolors most articles with which it comes in contact. Carbolic acid should, therefore, be used for disinfecting clothes, towels and similar articles, as well as for sprinkling upon the floor, window sills, and all parts of the house covered by paint.

To make a solution dissolve two pounds of copperas in one gallon of water, and stir briskly until thoroughly dissolved.

Carbolic Acid.—Add one and a quarter ounces pure carbolic acid in a fluid state to the same quantity of vinegar,

and dissolve this in a gallon of water. This is used to disinfect clothing, towels, and like articles. After being thoroughly disinfected with this solution, the clothing may be washed in strong soap-suds. Articles that can be boiled must be submitted to that process for at least one hour before being washed.

The clothing can be boiled within a few hours after being soiled; it must in all cases be soaked in the carbolic acid solution before being washed.

Cellars, vaults, stables, and damp, foul places should be disinfected by the liberal use of quicklime sprinkled about the contaminated places.

A solution of carbolic acid should be sprinkled on the floor and window-sills of sick-rooms and closets, and a solution of copperas, in earthen vessels, may be placed about the rooms.

Water-closets, privies, etc., should be disinfected by a free use of the copperas solution. A pint of the solution may be used to each privy or water-closet, morning and night.

Discharges from the bowels of the sick should be wet with copperas water and then buried.

Soiled clothing, etc., from the sick should be placed in a tub, and enough of the carbolic solution added to wet them thoroughly. After remaining an hour or two in the solution they must be thrown into hot water and boiled for at least an hour, and then well washed in strong soap-suds.

Woollen goods must be exposed to the fumes of burning sulphur in a close room, and afterwards hung out in the open air.

FUMIGATION.

After some diseases, such as small-pox and cholera, as well as bad cases of scarlet fever, it is necessary to fumigate the sick-room after the patient has left it, to destroy any germs of the disease that may be contained in it after the use of

disinfectants. When this is to be done, such articles as carpets, thick woollen goods, and the furniture should be left in the room, and all the openings closed, and even every crack well stopped. Then take an iron pot, or other suitable vessel with legs, and place it in the centre of the room. After arranging a hearth of bricks or rock, so as to be safe from fire, throw into the vessel enough powdered sulphur to last for eight hours. Provide enough fuel to last that time. Kindle a fire beneath the vessel, and immediately vacate the room, closing the doors tightly. Let the room remain closed for eight hours, after which the doors and windows should be thrown wide open. After the fumes of the sulphur have disappeared the wood-work and walls should be washed with soft-soap suds, to which carbolic acid has been added. If the walls have been papered the paper must be stripped off, or if they have been whitewashed they must be scraped, and afterwards a good coat of whitewash, to which a little carbolic acid has been added, must be applied to them. After this the windows should be kept open for thirty-six to forty-eight hours before the room is again occupied.

A person who has never had small-pox and is compelled to enter a room that is occupied by a patient with the disease, should take a thick veil (such as women often wear in the country) and, after folding it two or three times, soak it in a strong solution of copperas. Then place it around the head and over the face in such manner that the breath shall come through the meshes of the veil. By following these directions the probabilities are that the person will not contract the disease.

HEREDITY.

Disease, like certain family peculiarities, is often transmitted from parent to child. The hereditary taint in a child may be traceable directly to the parents, or it may skip a generation, when, although the father and mother may be

seemingly healthy, a careful inquiry will disclose the fact that the grandparents, one or both, suffered from the disease. In such cases the probabilities are that in the parents the tendency to the disease really existed, but owing to the excellent sanitary conditions surrounding them, the causes necessary to develop it were absent.

If both parents be affected with a constitutional disease, the children are almost certain to suffer from the same infirmity; but if one parent be healthy the chances are that by careful management some of the offspring may entirely escape.

Occasionally the hereditary affection is displayed at birth, but in most cases it is not developed until some time afterwards. It is not always the case that a child suffers from the precise disease that afflicted its parents. Thus, for instance, the offspring of consumptives may be scrofulous, while those born of scrofulous parents may have consumption. The children of syphilitic persons are often scrofulous, while cancer may, in after-life, attack those whose parents were either consumptive or scrofulous.

Therefore, while the same disease may be transmitted from parent to child, such is not always the case; but often the offspring will suffer from the effects of such transmission by becoming a victim of a disease having a close kinship to that with which its parents were afflicted. This is especially the case in nervous affections, for while the child of an insane parent may not become insane it will be very liable to have some other form of nervous disease, such as epilepsy, hysteria, mental instability, or weakness of will. If, in addition to being affected with a constitutional disease, both parents possess the same family idiosyncrasies, they are almost sure to transmit the disease from which they suffer to all their children. Hence the danger of the intermarriage of cousins, or others nearly related by blood, as the offspring

of such marriages are liable to inherit not only the physical disease, but also the mental peculiarities of the parents in an intensified degree.

While every one understands that consumption, scrofula and syphilis may be transmitted to the offspring of those suffering from such diseases, but few are aware of the extent to which the law of hereditary transmission applies to diseases other than those above mentioned.

Deafness is, to a certain extent, hereditary. The children of parents who became deaf late in life are liable to be likewise affected after they pass middle age.

Blindness is rarely transmitted from parents to children; but cases have been recorded where most members of a certain family, for several generations, became blind after passing their sixteenth year.

Organic disease of the heart is sometimes the result of hereditary influences.

Bright's disease of the kidneys is occasionally inherited from one or both parents.

The predisposition to *rickets* is often inherited, and although the offspring of rachitic parents are not necessarily the subjects of the disease, yet they are more liable to succumb to the exciting cause of rickets than those who are born of healthy stock; and when the disease is once developed in them it is much more difficult to arrest than in those whose systems are not tainted with rachitic blood.

Epilepsy is frequently transmitted from parent to child. The offspring of an epileptic parent may not have true epilepsy, but instead of it he may suffer from some other form of nervous disease having a close kinship to the parent's affection. Likewise, if we investigate the history of a child that is suffering from epilepsy, not caused by an injury, we may find that neither parent was epileptic, but that one or both were afflicted with some form of nervous disease

capable of being transformed into epilepsy by transmission. The transformation of nervous affections into one another is a vast subject, but imperfectly understood, and difficult of elucidation.

Convulsions in children may, to some extent, be transmitted from mother to child—at least, observation teaches that children born of mothers who had convulsions before delivery are liable to such seizures soon after birth.

Saint Vitus' dance is to a certain extent hereditary—that is, children who have the disease are apt to be the offspring of parents who have suffered from some form of nervous trouble, such as epilepsy, hysteria, or convulsions.

Gout and *rheumatism* seem to be hereditary. Thus we know that the children of rheumatic and gouty parents are more liable to these diseases than those whose ancestors were free from such affections.

No disease is more markedly hereditary than *syphilis*. The effects of the syphilitic taint may be manifested at birth or they may appear months afterwards. The children of syphilitic parents are weak and feeble, and often their various bodily organs are but imperfectly developed. In some cases the child at birth is covered by the peculiar eruption that belongs to syphilis. Some writers have supposed that scrofula was primarily induced by the syphilitic poison.

Cancer is so uniformly a hereditary disease that in most cases we can trace its origin either to the parents or grandparents; for, like consumption, it sometimes skips a generation.

It would seem that the transmitted taint of scrofula and of consumption may develop into cancer, as the children of tuberculous parents sometimes suffer from the latter disease.

Intemperance acquired by those who indulge in alcoholic drinks sets up a predisposition or taint which may pass from one generation to another. Instances of an inherited ten-

dency to drunkenness are too common to be doubted. This taint, however, is not lasting, like the poison of syphilis, consumption and scrofula, and unless kept up by intemperate habits will disappear in one or two generations.

From the foregoing it will be seen that the laws governing hereditary transmission of disease have a practical bearing on the marriage relation, and those who contemplate entering upon married life should be as careful to investigate the health and constitutional peculiarities of their intended companions as they are to inquire into their moral character and habits of life.

In the management of children who have hereditary disease transmitted to them, it is the duty of the parent to shield them as far as possible from any exciting cause that might develop the latent tendency to disease that already exists in their systems. Hence the offspring of those suffering from insanity, epilepsy, or other severe nervous disorders, should be guarded as much as possible from mental irritation and from all habits of life calculated to call into action their inherited infirmity.

Children who have inherited a tendency to consumption, scrofula, and like affections, should be well nourished, well clothed, and kept as much as possible in the open air. Those born of rheumatic or gouty parents should, as they grow older, observe the most rigid temperance and indulge but sparingly in animal food.

Another practical matter that should not be overlooked is the propriety of avoiding matrimonial alliances between families possessing the same hereditary taint, as well as between those that are related by blood, whether they possess the same hereditary taint or not, as there are but few families that are free from all congenital weaknesses and idiosyncrasies, and these latter are, as we know, greatly intensified by marriage between those who inherit them alike.

HEMORRHAGE.

Hemorrhage may be arterial, venous, or of a mixed character. In arterial hemorrhage the blood flows from an artery, is of a bright scarlet color, and is forced out in jets. The size of the stream will depend upon the calibre of the artery that has been injured.

In venous hemorrhage the blood is dark, and though it may flow in a stream of some size, it will not spurt in jets as in arterial hemorrhage, but the stream will be steady and even. If the injured vein, however, lies immediately over an artery, the pulsation of the latter may cause the stream of venous blood to flow unequally, or, in other words, each time the artery pulsates it will increase the force with which the venous blood escapes, causing a slight resemblance to an arterial jet.

In slight wounds, not involving any large vessel, the hemorrhage will be of a mixed character; both arterial and venous twigs being divided, the blood will be partly arterial and partly venous, and have a dark red color. In such cases the blood will not flow in a distinct stream, but will ooze from the cut surface.

Arterial hemorrhage may be dangerous to life, the danger depending upon the size of the vessel injured, and the difficulty of arresting the bleeding.

Unless a very large vein is injured, venous hemorrhage is not dangerous, and can easily be controlled by slight pressure.

Mixed hemorrhage is not dangerous to life, unless it occurs in a patient who is afflicted with *purpura*, or the "*bleeding disease.*"

In profuse hemorrhage the constitutional symptoms are well marked. As danger to life approaches, the lips and cheeks become pallid, there are great restlessness and anx-

iety, the extremities are cold and bathed in a clammy perspiration, the respiration is weak and sighing, the voice is also weak and changed in tone, the heart beats feebly and rapidly, the patient complains of giddiness and dimness of vision, and finally lapses into a state of unconsciousness. As soon as fainting occurs the bleeding ceases. The stoppage of the current of blood in the injured vessel permits the formation of a clot, which acts as a plug to prevent further bleeding. Sometimes this effort of nature is sufficient to save life. In other cases, however, no clot is formed, and all the alarming signs of approaching death are intensified; a slight convulsive movement ensues and the patient dies. Sometimes, after swooning and the formation of a clot in the bleeding vessel, the patient rallies, and the heart again forces the blood through the vessels with a force sufficient to dislodge the newly-formed clot, when the hemorrhage returns, to be followed by another swoon and perhaps death.

Treatment.—In all cases of dangerous hemorrhage the patient must not be allowed to assume the upright position. He must lie down with his head low, and on no account should he attempt to sit up, as sudden death may take place under such circumstances.

The most common method of arresting bleeding is by pressure. In arterial hemorrhage the pressure is applied either at the bleeding point or on the bleeding vessel at some place between the wound and the heart.

In venous, as well as in mixed, hemorrhage, the pressure is applied at the place where the bleeding occurs. Pressure at a bleeding point, if practiced as a temporary remedy, is usually made with a finger or the thumb pressed upon the part hard enough to stop the bleeding. Persons not used to this work usually press too hard. The pressure at first should be light, and gradually increased until it is sufficient to arrest the flow of blood. In this manner the hemorrhage

can usually be controlled without causing much pain. Often the pressure made in this way is sufficient to permanently arrest the bleeding; but if it is not, it may be necessary to make a firm compress by wrapping a coin, or, what is better, a piece of sole leather of proper size, in a slip of muslin, and, applying it to the bleeding point, secure it in position by a firm bandage.

Pressure on an artery above a wound may be temporarily made by grasping the limb with the hand, and, placing the thumb over the site of the vessel, making firm pressure until the bleeding ceases. To succeed in this manner, however, the operator must have a knowledge of the course and position of the artery. To arrest a dangerous hemorrhage from an artery until surgical assistance can be obtained, the tourniquet is generally used. If the operator knows where the artery lies he should fold a piece of muslin upon itself several times until he has a compress, say, two inches square and of sufficient thickness. This should be laid on the skin over the vessel; then tie a handkerchief or strong strip of muslin around the limb, and insert a small stick under the bandage and twist it until the pressure is sufficient to arrest the hemorrhage. The twisting of the bandage should be done gradually, and should cease when the bleeding stops, as it is not best to constrict the limb more than is necessary to stop the hemorrhage.

If the operator has no knowledge of the position of the injured artery, he can dispense with the use of the compress, and use the bandage and stick alone, which will stop the flow of blood, but it will require a greater constriction of the limb than it would if the compress were used.

In slight wounds, where the bleeding is not free, but comes from minute vessels that have been divided, the application of some astringent, as persulphate of iron, powdered tannin, alum, etc., may be of use. Such wounds should be freely

exposed to cold air, as sometimes the vessels will contract and the bleeding cease after such exposure.

Very hot water will often arrest bleeding from small vessels. It must be used as hot as can be borne without scalding the skin; otherwise, instead of arresting the bleeding, it will increase it.

In all cases of hemorrhage from the leg or arm the limb must be elevated above the body, the higher the better; this expedient alone being occasionally sufficient to arrest bleeding.

Bleeding from the palm of the hand, or about the wrist, if caused by injury to an artery, is always a serious matter, and requires prompt surgical treatment. The blood-vessels here are numerous and hard to tie. Until a surgeon arrives some one should take a compress and place it on the wound, and with the thumb make firm pressure on it, at the same time holding the injured hand up above the patient's head. If the bleeding cannot be controlled in this manner a compress should be laid in the bend of the elbow, and a handkerchief tied around the arm over it and twisted with a stick as before directed. Bleeding at any point below the elbow should be treated in the same manner.

If the bleeding be from a wound in the arm above the elbow, and not too near the shoulder, the bandage should be placed above the bleeding point and twisted with the stick until the hemorrhage ceases. If the bleeding is too near the shoulder joint to admit of the application of the tourniquet or twisted bandage above the wound, the operator should take a ball of yarn the size of a man's fist, or else a compress made by rolling a towel or similar article upon itself so as to make a firm roll about four inches long and three inches in diameter. This should be placed in the arm-pit as high up as possible, after which the arm should be brought to the side of the chest and firmly bandaged in that position by passing a strong piece of muslin several

times over the upper part of the arm and around the opposite side of the chest. If this does not arrest the bleeding, the operator should strip the patient's clothing from his breast, and placing both thumbs flat on the skin make steady pressure immediately above and behind the collar bone. The direction of the pressure should be downward and backward in order to compress the subclavian artery. In this manner bleeding can often be controlled until the arrival of a surgeon.

Hemorrhage from the bottom of the foot, like that from the palm of the hand, is difficult to control. Pressure with a compress and the thumbs should be made at the bleeding point, and if the bleeding does not cease, a compress can be put in the flexure under the knee-joint and the handkerchief tourniquet put around the limb at that point. All hemorrhages below the knee are to be treated in the same manner. In all cases the limb must be elevated above the body. In hemorrhage above the knee and not too near the hip-joint, the handkerchief tourniquet must be applied above the bleeding point and tightly twisted. The blood-vessels here lie deep, and it requires a good deal of pressure to compress them. If the bleeding cannot be controlled in this manner, firm pressure with the thumbs should be made over the femoral artery where it comes over the brim of the pelvis. Feel for the top of the pelvic bone at the inner part of the thigh, and make firm pressure against it, and the vessel will likely be sufficiently compressed to arrest the bleeding until a surgeon can be summoned. Sometimes, in hemorrhage from the thigh, the bleeding can be arrested by forcibly bending the thigh upon the body and firmly bandaging the limb in that position. Likewise, bleeding from the foot, and the leg below the knee, may be controlled, to some extent, by bending the leg upon the thigh and securely fastening it in that position with a firm bandage.

Bleeding from wounds about the head and face can be easily controlled by pressure. The bones in this situation are so near the surface that but little pressure with the thumb or finger is required to arrest the flow of blood.

Hemorrhage from wounds of arteries in the neck is extremely dangerous and hard to arrest. Firm pressure at the bleeding point should be made, and if the wound be of any size a compress should be placed over it and pressure made with the thumb or fingers, or else the wound must be stuffed with sponge or cotton, and pressure made upon it.

Venous hemorrhage about the neck can be arrested by pressure made at the bleeding point.

Hemorrhage from different parts of the trunk should be treated in the same manner as if it proceeded from wounds of the neck.

The tourniquet cannot be used on the trunk, and hence pressure with the finger, and, if the wound be a large one, packing it with a sponge or bits of muslin, should be relied upon to control the bleeding until the arrival of a physician.

The permanent arrest of bleeding from arteries is usually secured by ligating the injured vessel.

CHAPTER XXV.

Medicines.

MEDICINES should be kept in glass vials with close-fitting stoppers. The vials containing acids should have glass stoppers, but if these cannot be had one made of beeswax may be substituted. Cork should never be used to close such vials, as the acid will soon destroy it.

Many medicines alluded to in this book are not included in the following list, for the reason that, being recommended in chronic diseases only, there will be ample time to send to a drug store for them. It is necessary to keep only such remedies in the house as may be needed for frequent use, or in cases of emergency.

Vials and packages containing medicines must be carefully labeled with the name of the article plainly written; and should the label be removed from a vial, it will be best to pour out the contents and refill it with the proper medicines.

The vials containing medicines in powder should have large mouths to permit the easy removal of their contents.

Some medicines lose a part of their strength by long keeping, while others, from the same cause, become stronger. Laudanum is an example of the latter class. It is made by dissolving opium in alcohol, and if a part of the alcohol evaporates from long keeping, the relative amount of opium contained in a given quantity will be increased.

Alcohol must be kept in a bottle so tightly corked that it cannot evaporate. If a common cork is used it will be ne-

cessary to occasionally press it firmly into the bottle; otherwise, it will soon become loose and permit a part of the alcohol to escape.

Alcohol is a most valuable external remedy. The spirits of camphor and the tincture of arnica have long been highly prized for their healing powers. The fact is that they, as well as other remedies of like character, owe their virtue mainly to the alcohol of which they principally consist. Alcohol, diluted with two parts of water, is, perhaps, the best dressing that can be used for cuts, bruises and fresh wounds. A wound or laceration of soft tissues that is subjected to a thorough washing with dilute alcohol, and to its constant application afterwards, will usually heal speedily with but little pain and without much risk of blood-poisoning from absorption of septic material.

Alcohol forms the principal ingredient in certain gargles used in the treatment of acute sore throat, attended with inflammation.

In old sores or ulcers of a foul and indolent nature, a dressing of equal parts of alcohol and water can be applied for a few times, after which the strength should be decreased by adding two or three parts of water to one of alcohol.

A mixture of one part of alcohol to two or three of water will be sufficiently strong to apply to fresh wounds, while, as a gargle for an inflamed throat, the proportion should be one part of alcohol to four of water.

Alum should be kept in a finely powdered state, to be used, if necessary, as an emetic in cases of croup. It is the least depressing of all the emetics, and to vomit a child with it a small teaspoonful, finely powdered, may be given after being mixed with a like quantity of honey or molasses. If the first dose does not produce vomiting in from ten to fifteen minutes, it may be repeated with perfect safety.

After the child is through with vomiting it will soon recover from the nausea, and its strength will be but little affected by the action of the medicine.

Aromatic spirits of ammonia is a gentle stimulant and antispasmodic, and is useful in cases of fainting. It is also used in some forms of nervous affections as hysteria, etc. The dose for an adult is from a half to a teaspoonful plentifully diluted with water. A child one year old can take five or six drops in a teaspoonful of water.

Liquor ammonia, or spirits of hartshorn, should be kept in a bottle with a close-fitting stopper. Mixed with equal parts of water it is a useful application to neutralize the effects of the sting of bees and other poisonous insects. Its principal use, however, is in preparing liniments, such as the common hartshorn liniment, which consists of one part of liquor ammonia and two of sweet oil. A liniment that is useful in inflammatory affections of the chest and throat can be made by mixing one part of the oil of cinnamon, four parts liquor ammonia and ten parts of sweet oil.

Muriatic acid should be kept in a bottle with a glass stopper.

It is useful in the treatment of various eruptions on the body, such as ringworm, milk crust, etc. When properly diluted with water, it is a most valuable remedy in thrush.

As an application to the skin in various eruptions occurring in children, the greatest care must be taken that it is sufficiently diluted. If the surface is very raw a teaspoonful of the acid to a half pint of water can be tried, and if it causes much pain the mixture should be further diluted.

Calomel should be kept in a dark vial to prevent exposure to the rays of light. If such a vial cannot be obtained, the light can be excluded by pasting dark paper around an ordinary bottle.

This is a very useful remedy in the hands of one who thoroughly understands its use; but no non-professional person ought to presume to prescribe it internally for a child. It should, however, be kept in the house because of its great usefulness in the external treatment of eruptions and various diseases of the skin. Old sores or ulcers situated upon various parts of the body are often amenable to treatment by the application of calomel, either in powder or in the form of an ointment.

In scald head, milk crust and other forms of eczema, excellent results are often obtained by dressing the diseased surface with calomel ointment.

It is useful also, both in the form of powder and ointment, in the treatment of sore navels in infants. In the vomiting that attends summer complaint, a minute portion (the twelfth of a grain) mixed with a grain of white sugar and put on the tongue of the child, and washed down with a teaspoonful of ice water, often gives relief.

An ointment can be made by mixing a half teaspoonful of calomel with a tablespoonful of lard. If the ointment is to be used in warm weather, it will be best to add mutton tallow to the lard before mixing it with the calomel, to prevent it from melting too rapidly. When vaseline is at hand, it can be substituted for the lard.

Dover's powder is one of the most valuable and safest preparations of opium. It is given to adults in doses of from five to ten grains, while children one year old can take from a fourth to a third of a grain. It is used to procure rest and sleep in many forms of disease, and when combined with other remedies, it is of great advantage in some cases of diarrhœa. Containing, as it does, the same quantity of ipecac as of opium, it becomes one of the most valuable preparations of the latter article in the treatment of certain diseases of the chest.

Epsom salts should be kept in a jar with a close-fitting stopper. It is a valuable purgative, and is frequently used in domestic practice. It produces loose, watery operations, without much pain or griping.

In dysentery, small doses of Epsom salts, frequently repeated, is often of great value.

The *effervescent Epsom salts* should be used in place of the old and nauseous preparation. It is not very unpleasant to the taste if swallowed during effervescence, and is certain and pleasant in its action.

Godfrey's Cordial.—This preparation contains a small portion of opium, and is of about the same strength as *paregoric.* It is much pleasanter to the taste than the latter, and, being free from camphor and oil of anise, it agrees much better with the stomach. Twenty drops of Godfrey's Cordial is about equal in strength to one drop of laudanum.

Children suffering from colic are often relieved by a few drops of Godfrey's Cordial when other remedies have been used without effect. It can be given to relieve the pain and straining that accompany flux in children, but care must be taken not to give it too often nor in too large doses.

Godfrey's Cordial should not be administered to young children except in cases of absolute necessity, for, like other preparations containing opium, it is not only dangerous to some extent if improperly used, but in all cases it interrupts the process of digestion, and in this manner tends to increase any disorder of the stomach that may already exist.

In obstinate coughs, unattended with fever or inflammation, when milder remedies afford no relief, Godfrey's Cordial can be beneficially added to other medicines of an expectorant character. As a cough remedy the dose must be small, not more than one-fourth of what is given to control pain.

For the purpose of controlling severe pain, a child a few weeks old may take from ten to twelve drops of Godfrey's Cordial in a little water. At six months from fifteen to twenty drops can be given, and a child one year old can take from twenty-five to thirty drops.

Glycerine is useful in chapped lips and hands and as a soothing application to inflamed surfaces. It enters into the composition of many cough medicines and mixtures for sore throat.

Horse-radish.—In the form of a syrup, this article is useful in colds and coughs after the acute symptoms subside and the patient no longer has fever.

A syrup can be made in the following manner: Put a heaping tablespoonful of fresh horse-radish, finely grated, into a small teacupful of alcohol and water (equal parts). Let it stand forty-eight hours, after which it should be strained through a cloth. One tablespoonful of this mixture can be added to six tablespoonfuls of a thick syrup made of white sugar and water. A child two years old can take a teaspoonful every three or four hours.

Tincture of iodine is used as an external application in diseases of the throat and chest, as well as in enlargement of the glands, etc. In ordinary cases of ringworm of the face and other parts of the body, it forms a useful application. As a counter-irritant it can be applied once or twice a day until the skin becomes tender. It should not be used in full strength on the skin of very young children.

Syrup of Ipecacuanha.—This is a very reliable as well as useful remedy, and if properly administered is entirely harmless. It should be kept in every house where there is a young child, and if promptly and judiciously used, life may often be saved by it. In very warm weather it should be kept in a cool place; otherwise, it will undergo fermentation.

As an expectorant in recent colds and coughs, attended with fever, it is of great value. In the treatment of bronchitis and in croup occurring in children, it is one of the most common remedies. In bronchitis it is given in small doses, frequently repeated. In croup it is administered in teaspoonful doses every ten or fifteen minutes until it produces vomiting, after which ten to fifteen drops may be given every half hour to two hours to keep up its nauseating effect. When given as an expectorant, a child a few days old can take from three to five drops, while one at six months can take from six to ten drops at a dose. If it causes vomiting in these doses less should be given, the aim being to produce slight nausea. As an emetic, a teaspoonful will usually be sufficient for a child one or two years old. If the first dose does not produce vomiting, it can be repeated every fifteen minutes until it has the desired effect. The remedy is very safe, for if too much is given it will speedily be thrown up.

Persulphate of iron is the most powerful astringent we possess for arresting bleeding by direct application to the bleeding vessels. The *solution* of the persulphate of iron (Monsel's solution) is often used instead of the powder. Both articles should be kept in a vial with a closely-fitting stopper.

White lead, ground in oil, should be kept in the house, to be used in burns and scalds. When properly applied it is superior to all other dressings in these accidents. The lead should be kept slightly covered with linseed oil to prevent it from becoming hard and dry.

Laudanum is a valuable remedy when properly prescribed, but in large doses it is a deadly poison.

Persons not well acquainted with the effects of this medicine should seldom venture upon its administration, but cases may arise where the pain is so severe as to require a dose of laudanum for its mitigation.

In that form of summer complaint known as ileo-colitis, it is sometimes necessary to use an injection containing a few drops of laudanum to relieve the severe straining and pain that accompany the disease.

The dose for a young infant is from one-half to one drop. A child one year old can take from one to one and a half drops. As some children are very susceptible to the influence of laudanum it is best to begin with a small dose.

As the full effects of laudanum are not manifested for two or three hours after it has been taken, the dose should not be repeated inside of that time.

Sugar of lead must be kept in a glass bottle well corked. As a wash, when dissolved in water, it is useful in inflamed conditions of the skin, especially when caused by poisonous substances. It is often used by non-professional persons, in the form of a weak solution, as an application to inflamed eyes, and many of the patent "eye-waters" contain sugar of lead. The use of such remedies in affections of the eyes is dangerous, for the reason that when ulcers exist upon the cornea, the lead is often deposited in the form of an insoluble precipitate, thus interfering with the transmission of light to the retina.

Mustard, finely ground, is one of the quickest and safest emetics that we possess. It should be kept in a bottle tightly corked to exclude the air. A teaspoonful mixed with a half cupful of water and given to a child, when poisoned, will usually cause vomiting in a few seconds. The dose can be repeated if necessary.

Sweet Spirits of Nitre.—An ounce or two of this medicine should be kept in a vial with a close-fitting cork. In small doses, well diluted with water, it is useful when administered to a child that is feverish and has a hot skin.

The dose for an infant a few weeks old is from three to four drops; at six months from six to seven drops, and at

twelve months from ten to twelve drops. Each dose should be mixed with a teaspoonful of water.

Sweet oil is often needed about a house, and a good-sized bottle filled with it should always be kept ready for use.

A bottle of *castor oil* is indispensable to every family. Care should be taken to purchase the cold pressed oil that has not become stale.

Paregoric is a useful addition to various cough mixtures in chronic cases where the cough depends upon irritation, and is not accompanied by fever. Also in some cases of colic in infants it may be necessary to give small doses to relieve pain. Twenty drops of paregoric are equal to one drop of laudanum in strength, and a child one year old, when suffering from pain, can take from ten to twenty drops at a dose. When added to cough mixtures, or given to arrest diarrhœa, the dose should be from one-fourth to one-half the above quantity.

Chlorate of potash should be finely powdered and kept in a vial tightly corked. It is useful in affections of the throat, and is one of the most common remedies in such cases.

A saturated solution can be made by adding a teaspoonful of the potash to a small glassful of water, of which a child a year old may take a teaspoonful every two or three hours. As only a small portion is soluble in cold water, it is not necessary to be particular as to the amount added to the water for internal administration.

As a gargle, it is useful when added to a solution of tannin in alcohol and water.

Rhubarb.—This is one of the most efficient and safe laxatives used in the treatment of diseases of children. Its taste is the greatest objection to its use, but when properly made into a thick syrup children will usually take it without difficulty. As a laxative it is of great value in diseases of children, for the reason that, while its primary effect is to operate

on the bowels, its secondary effect is astringent. This being the case, there is but little danger of diarrhœa following the action of rhubarb.

Syrup of rhubarb is usually made from the fluid extract. But this is not as reliable as that made directly from the root. The following is a good method of preparing it for domestic use: take a piece of Turkey rhubarb root the size of a hulled walnut, cut it into very small thin pieces, and after putting it into a tin cup, pour over it a half pint of boiling water. Cover the vessel and let it stand twenty-four hours, after which place the mixture over a slow fire and let it simmer until one-third has evaporated. Strain through a flannel cloth, pressing the boiled rhubarb until all the strength is out of it. Put the fluid back into the cup, let it come to a boil, and add enough white sugar (about half a pound) to make a thick syrup.

Of this syrup a teaspoonful can be given to a child six months old, while one that is a year old can take one and a half teaspoonfuls, and so on in proportion to age.

If necessary, larger doses can be given with safety. If the first dose produces no effect within six or eight hours, its action may be assisted by the use of an injection of warm water. If this does not produce a satisfactory operation the rhubarb may be repeated, and if necessary it can likewise be followed by a similar injection.

Tannin is another remedy that should be kept constantly on hand. It is a powerful astringent, and in cases of bleeding from the gums after the extraction of teeth, a small piece of cotton or sponge, thoroughly wet with water, and then dipped in the tannin until it is well saturated, can be placed into the cavity of the tooth and held there with firm pressure until the bleeding ceases. In bleeding from the nose, tannin, finely powdered, may be snuffed up the nostrils with benefit.

Bleeding from slight cuts also may often be arrested by applying tannin to the wound.

Its use in domestic practice should be confined mostly to external applications and to gargles. A most useful gargle in all cases of sore throat, and even in diphtheria, is made by dissolving a teaspoonful of tannin in a tablespoonful of alcohol, to which four tablespoonfuls of water have been added. A child, if old enough, can gargle with this every two or three hours during the day. If the child is too young to use the gargle, the mixture should be applied to the throat by means of a camel's-hair brush; but if this cannot be had, the nurse can easily substitute a "swab" made by tying a small piece of well-worn muslin to a small stick or a pencil.

The application must be made gently, so as not to irritate the inflamed throat by hard pressure. The addition of a half teaspoonful of the chlorate of potash to the above wash will increase its efficacy in some cases. If there is much white deposit in the throat the amount of tannin entering into the wash should be doubled.

Vaseline constitutes a nice dressing for excoriations and chaps, no matter on what part of the body they are situated. It is an excellent substitute for lard in making ointments for domestic use. A tin box, containing two or three ounces of vaseline, should be kept in the house.

Oxide of zinc is very useful when applied to raw surfaces, such as sores, excoriations, etc. The zinc should be finely powdered, and then dusted on the affected parts. It is mainly used, however, in the form of an ointment, made by mixing one part of finely-powdered oxide of zinc with six parts of lard or vaseline.

Precipitated carbonate of zinc is similar in its action to the oxide of zinc, and may be substituted for that article when, from any cause, the oxide is found not to answer the intended purpose. Thus, in the form of a fine powder, it can

be dusted on "chafings" and raw portions of an infant's skin where the moisture of the parts causes the oxide to form hard, irritating lumps.

Like the oxide, it can be used in the form of an ointment as well as a powder.

Sulphate of zinc, or white vitriol, is often used in inflammation of the eyes. Two grains of white vitriol to an ounce of pure rain-water forms an excellent application in some cases. But this, like other applications to the eyes, should be used only by direction of a competent physician. In inflammation of the skin, caused by contact with poisonous substances, as poison ivy, a wash made by dissolving a teaspoonful of white vitriol in a pint of water constitutes a valuable remedy.

Adhesive plaster will be needed in the treatment of cuts and for other purposes.

It is also well to keep in the house a small roll of *court plaster* to dress wounds of the face and hands.

APPENDIX,

CONTAINING

Articles on Diseases and Accidents

THAT MAY

SUDDENLY HAPPEN TO GROWN PERSONS.

Prevention of Disease.

A VAST amount of sickness might be prevented by paying proper attention to the laws of health. It is true that the poor and the laboring classes have not the time nor the means to place themselves in the best possible condition to enjoy healthy lives. But if possessed of a reasonable amount of the right kind of knowledge, anyone can, by using a little forethought and judgment, avoid many diseases from which the careless and negligent are sure to suffer.

Many families make the mistake of living in rooms that are over-heated during cold weather. From 65° to 68° is as high a temperature as should be allowed in living rooms. Persons who have a tendency to disease of the lungs often fall victims to consumption by reason of continually breathing super-heated air. Indeed, it is possible that consumption might be avoided, even by those whose parents were afflicted with the disease, by remaining constantly outdoors during the day-time, depending, in cold weather, upon a sufficient amount of clothing to keep the body warm, and

sleeping in open rooms, without fire, at night. Such a course of life, however, should be begun early, before one's constitution has been affected to any great extent by disease.

Remaining for hours in a hot, close, and impure atmosphere is sure to give rise to serious troubles, the effect of which is likely to be lasting. The practice of remaining in a hot room during cold weather until the body begins to perspire and then going out into the cold air, often results in attacks of bronchitis, pneumonia or pleurisy. Persons who travel during the winter season in over-heated and badly ventilated cars are also liable to suffer from these diseases.

Continued exposure to damp cold for hours without making any effort to warm the body, or to replace wet clothes by dry ones, is a prolific cause of diseases of an inflammatory or a rheumatic character.

Sleeping in apartments that have no provision for the admission of fresh air is attended with great detriment to the general health. Even if the sleeping rooms be large, it is necessary that they should have ventilation in order that pure air may be constantly admitted, while that which has become foul may have means to escape. Merely raising the sash two or three inches and fitting a board under it will, in many cases, be sufficient, and will not create any current or draught of air in the room.

The practice of permitting the bowels to become obstinately constipated is highly injurious. Persons who are habitually constipated, and who perform hard manual labor, thereby creating a demand for large quantities of food, are in great danger of incurring serious disease. When the bowels fail to act sufficiently often, their contents become highly irritating. The absorbent vessels of the intestines, instead of taking up the nutritive portion of the food alone, no doubt seize upon elements that are foreign to healthy

nutrition and carry them into the circulation. In this manner the blood becomes contaminated to some extent. But, in addition to this, the dry hardened feces, by their mere presence, may give rise to irritation ending in inflammation. Diarrhœa and dysentery are sometimes due to irritation caused by the presence of long-retained fecal matter in the bowels.

While, as a rule, harsh purgatives ought to be avoided, measures should be taken to produce a daily evacuation of the bowels, and if this cannot be satisfactorily accomplished by regulating the diet and using an occasional injection, it will be necessary to resort to some kind of mild purgative medicine. While excessive purgation should be discountenanced as being not only useless, but injurious, it is better and safer to take an occasional dose of a mild purgative than to permit the bowels to go unmoved for days at a time.

There is another form of constipation that should be guarded against. Sometimes the bowels are moved regularly once or twice a day, but the discharges are small and consist of hard lumps. In such cases the intestines fail to empty themselves thoroughly, and the indication for an occasional mild purgative is as clearly marked as though the bowels were not acting at all.

Many farmers and others engaged in hard manual labor make the mistake of not taking sufficient intervals of rest during the day's labor. To begin hard work soon after daylight and continue it until dark, or even later, with only an hour's rest at noon, will, in the end, break down the hardiest constitution, and cut short by many years a natural life.

Farm work ought to be conducive to long life, but as practiced in this country such is not the case. The average age to which farmers attain is not as great as that of persons

engaged in some other avocations. Besides, many farmers, when they reach advanced life, are mere physical wrecks, being bent in their backs and legs to a degree that borders on deformity, while rheumatism, the result of previous exposure, renders them incapable of enjoying life because of the aches and pains from which they suffer. If they had, in early years, been more moderate in taxing their bodies with hard work, and had carefully guarded themselves against unnecessary exposure to bad weather, instead of being misshapen wrecks of their former selves, they would, in advanced life, be fine specimens of matured physical manhood.

The plea made for such unremitting toil by farmers and others living in the country is that it is necessary, as otherwise they would be unable to support their families. A proper consideration of the subject, however, will likely teach the farmer that success in life depends more upon good management than upon hard and continuous labor. Instead of applying himself to unremitting bodily toil, thus wearing out his physical powers prematurely, he will find that he can get on in the world better by adopting a system of good management requiring an exercise of the intellectual faculties with a moderate amount of manual labor. Such a course will certainly tend to prolong his life, and most likely yield him satisfactory pecuniary results.

The life of a farmer's wife is usually one of hardship and incessant toil. Even before the dawn of day she is often compelled to be out of bed and at her household duties. Nine or ten o'clock at night finds her still at work, trying to complete the day's labors. Even on Sundays she has little or no rest, for that day in the country is often set apart for visiting and receiving visitors. To prepare extra meals for visiting friends increases the labors of the housewife and robs her of much needed rest and recreation. No wonder

that under such circumstances the good wife soon loses much of the ambition with which she started out in life, and settles down to a humdrum mode of existence that is almost entirely devoid of social and intellectual pleasures. She loses much of the charm of womanly grace that makes the female character lovable, and her once handsome face becomes marked with those lines that tell so plainly of the cares, the labors, and the anxieties from which she suffers.

Farmers' wives usually spend entirely too much of their time in the kitchen. Three full warm meals during every one of the three hundred and sixty-five days in the year are not necessary. Many prepare more dishes for each meal than is required for good living. A few articles of food, properly cooked, and partaken of in moderation, is sufficient for the enjoyment of good health. Much of the ill-health observed in persons who live in the country is caused by eating too much at a time, or else by partaking of food that has been badly prepared.

The habit of eating large quantities of rich food—especially when the system is depressed and the stomach weakened by continued hard work—so common in this country, will, if persisted in for any great length of time, impair the health of even the most vigorous. Dyspepsia, with all its attendant ills, will sooner or later sap the vital powers and cut short the existence of the victim.

When a person is compelled to work in the harvest fields and other places, exposed to the direct rays of the sun, during the excessive heat of summer, the greatest prudence should be exercised both in eating and in drinking. The habit of drinking large draughts of very cold water at such times should be avoided. When thirsty the water ought to be taken in small quantities, a sip at a time, and swallowed slowly. In this manner but little cold water will be required to quench an ordinary thirst. Unripe and sour fruits should

not be indulged in under such circumstances, and green vegetables, such as cucumbers, melons, radishes, etc., should be strictly avoided; otherwise cholera morbus, diarrhœa, flux and similar diseases are apt to result.

Most healthy persons eat nearly twice as much as is needed for sustaining their strength and providing for the repair of the waste tissues, and if one will remember this fact and confine himself to a reasonable amount of good nutritious food, properly prepared, he will escape many attacks of sickness that those who are less careful will be certain to incur.

Another source of fatal disease is found in the attendance upon burials during inclement weather. Persons often attend such places without sufficient protection to their bodies. The feet are especially liable to suffer from standing upon cold, damp ground. During a part of the services at the grave the heads of those present are uncovered for quite awhile. As a result of such exposure, bronchitis and pneumonia are to be feared, especially in those who are advanced in life. Those who attend burials during severe weather ought to protect themselves with sufficient clothing, should wear overshoes, and remain with their heads covered during the entire ceremonies. The person in charge of the services should, as a matter of safety, advise those present not to uncover their heads.

Persons who live in malarial districts should exercise care in reference to their water supply. The practice of placing dwellings near creeks and ravines, so as to save the expense of constructing wells and cisterns, should be strictly avoided. The use of water found in springs and ravines, in malarial countries, for drinking and culinary purposes, is almost certain to be followed by ague or some other form of malarial disease.

If a dwelling be located upon a piece of land so elevated that water will readily drain from it, and if a deep well or

cistern be constructed to furnish water for drinking and other purposes, the family will escape many attacks of malarial diseases that, under other conditions, they would be certain to suffer from.

If possible, persons living in malarial districts should sleep in upper rooms of the house. The malarial poison seems to be especially active at night, and is found in low situations near the earth's surface.

Those who live in houses situated in low valleys near the entrance of a creek or ravine are liable to suffer greatly from malaria, while persons living in houses in the same valley, but removed from intersecting creeks and hollows may be comparatively exempt from ague and kindred diseases.

An even temper not only contributes to good health and long life, but it also adds greatly to one's enjoyment, rendering him pleasant and agreeable to those with whom he is associated.

Some persons are unfortunately inclined to fret and worry over matters that are so trivial in their nature as to be unworthy of serious reflection. Under such circumstances digestion becomes impaired, and the healthy action of the nervous system is interrupted.

Of all the passions that afflict mankind, anger is, perhaps, the most intense and destructive in its tendencies. Under the influence of severe spells of anger the heart is often sympathetically affected, becoming intermittent in its action. If the trouble is long continued it may end in changes of the heart's structure of an incurable nature.

Cases have been recorded by trustworthy observers of persons who, during a fit of anger, have been seized with an attack of intermittent action of the heart from which they never entirely recovered.

To gain a mastery over the passions is probably within the power of everyone who possesses a well-balanced mind

coupled with a certain degree of will-power. But to insure success requires the persistent and long-continued exercise of considerable patience and self-control. But he who gives his best efforts to the accomplishment of this object will meet with an abundant reward in the better enjoyment of life, in the freedom from many ills that would otherwise afflict him, and in the addition of many years to his existence.

CHAPTER II.

Pain: its Significance and Treatment.

PAIN is produced by a stimulus, stronger than usual, being applied to nerves of sensation, and may occur wherever such nerves are distributed. The stimulus, from whatever cause, may be applied to any part of a sensory nerve, from its origin to its termination; but the pain will be felt at its peripheral extremity. This explains why, in hip-joint disease, the pain, instead of being felt at the affected joint, is referred to the knee, where no real disease exists. It also accounts for the well-known fact that irritation of a nerve in the scar of an amputated limb will give rise to a sensation of pain that is referred to the parts that have been removed.

Pain differs, in character and intensity, in different tissues, due, to some extent, to the nature of their intimate structure. Those tissues that are soft and easily distended are not the seat of such sharp, excruciating pains as are observed in firm and unyielding structures.

Mucous membranes and the substance of internal organs are not subject to the agonizing pains that affect serous membranes which line the cavities and cover some of the viscera of the body. The pain that accompanies inflammation of the substance of the lung (pneumonia) is of a dull, heavy character; while in inflammation of the serous membrane that covers the lung (pleurisy) it is of a sharp, cutting na-

ture. So, also, in inflammation of the substance of the brain, the pain is heavy, dull and aching; while inflammation of its membranes gives rise to keen, lancinating pains that cause the patient to scream out in agony.

Pain of the head, when of a continuous, dull, aching character, usually depends upon some derangement of the stomach. If fixed in one spot, either on the head or the face, and of a sharp, darting nature, appearing in paroxysms, the pain is most likely neuralgic. If the pain is accompanied by vomiting and giddiness, it will probably prove to be an attack of sick or nervous headache. Nervous headache usually disappears in a day or two, but if the attack of pain in the head with vomiting and giddiness continues for a much longer time, it may be connected with brain disease. If the headache is persistent, and if, in addition to the vomiting and dizziness, there is squinting of the eyes, or dropping of the upper eye-lid, the existence of brain disease is almost certain.

In the early stages of some cases of epidemic cerebro-spinal meningitis, the headache is intense, the patient declaring that his head feels as though a saw were being driven through it. In such severe cases the patient usually becomes delirious within a few hours from the beginning of the attack. During his delirium he is restless, hard to hold in bed, and screams, sings, or whistles in a tremulous tone.

A pain at the top of the head indicates ovarian trouble, and occurs often in hysterical women.

The pain in the head sometimes complained of by school children during close application to studies, may be due to errors of refraction of the eye, or to weakness of the muscles of accommodation, and is curable by the use of proper spectacles.

Pain in the neck is usually of rheumatic origin. When this is the case it will be greatly increased by any movement

of the muscles of the affected part. Neuralgic pain of the neck can be distinguished from the above by its paroxysmal character, and by its being independent of muscular movement.

Pain in the chest may be situated in the chest wall, or in the interior of its cavity. In the former case it will most likely denote either muscular rheumatism, or intercostal neuralgia. If the pain is due to the former it will be greatly increased by any movements of the muscles of the part; if to the latter, the history of previous neuralgic attacks, the paroxysmal character of the pain, and the presence of spots that are tender on pressure, will be sufficient to denote its real nature.

The pain that accompanies pleurisy may be referred to the chest wall, and as it is greatly increased when the patient coughs, it may be confounded with muscular rheumatism; but patients suffering from pleurisy have considerable fever, while in muscular rheumatism there is usually an absence of febrile movement.

Pain in the region of the heart may arise from different causes. It most usually occurs in conditions of nervous debility, and is often associated with indigestion. Patients thus afflicted often imagine that they are the subjects of some serious disease of the heart, not knowing that organic heart disease is rarely productive of much pain, and that some of the worst cases are devoid of any symptoms of such a character as to call the attention of the patient to the true nature of his complaint, while functional derangements of the heart, depending upon nervous influences, and unattended with danger to life, cause him the greatest anxiety.

Pain in the heart, occurring suddenly and with a feeling as though the heart were being tightly compressed, and accompanied with intense apprehension of death, with paleness of the face and some distress in breathing, points to

angina pectoris, a dangerous and incurable disease. In angina pectoris the pain is usually not confined to the heart, but extends to the left shoulder and down the arm to the elbow.

More or less pain is often felt about the heart during the course of acute rheumatism, and may be due to the commencement of inflammation of the membrane lining the cavity, or covering the outside of the heart. Permanent organic heart disease not infrequently has its origin in an attack of acute inflammatory rheumatism.

The pains that accompany various acute affections of the pulmonary organs have been alluded to in the articles treating of those diseases.

Pain in the spinal column, increased by pressure upon any of the processes of the spine, usually indicates, not actual disease of the spinal cord, but that peculiar condition of the nervous system known as spinal irritation. It is very common in hysterical persons, and may be present in others who from any cause have become greatly debilitated.

Pain in the back or loins is nearly always, in the absence of an injury, the result of muscular rheumatism, which, when it affects the loins, is known as *lumbago*. The pain is greatly increased by bending, straightening the back, or by turning in bed. The patient, if seated in a chair, finds it impossible to rise from it, except with the greatest difficulty and distress. Inflammation of the structures of the kidneys, as well as the presence of stones in those organs, may give rise to pain in the loins; but in such cases, other symptoms having reference to the urinary organs will be present, and besides, the patient will likely be in greater distress than when he is suffering merely from lumbago. In lumbago the pain in the loins is the only trouble complained of, while in affections of the kidneys other symptoms will attract attention.

Pain in the abdomen may be referred either to the abdominal wall or to the cavity. When seated in the wall, it is usually either rheumatic or neuralgic. Occasionally, though rare, it depends upon inflammation, or abscess, situated in the abdominal muscles.

When pain is referred to the contents of the abdominal cavity it may be dependent upon internal strangulation of the bowel; and when this is the case it will be accompanied by vomiting and constipation, with distention of the abdomen. In such cases, if the vomiting continues long, the matters thrown up will be fecal in character and have the odor and appearance of discharges that are passed by stool.

In other cases the abdominal pain may be caused by a hernia or rupture becoming strangulated. If a rupture is known to exist, and it is tender and painful on pressure, and if there is continuous vomiting, and especially if the vomited matters have the odor and appearance of discharges that are ordinarily passed from the bowels, the case is one of strangulated hernia, and a surgeon must be summoned without delay.

Pain in the bowels, accompanied by swelling of the abdomen and great tenderness on pressure, with a quick, weak pulse, is observed in cases of peritonitis—a disease, which, though rare, is of serious import and usually terminates fatally. In such cases the patient will lie on his back with his knees drawn up, and his face will have an anxious expression. Closely allied to the symptoms of peritonitis, in some respects, are those that are observed in some hysterical women. They complain of great pain, and cannot bear the least pressure upon the abdominal walls. Indeed, with them the slightest pressure is intolerable, while steady, firm pressure, if made with the patient's consent, is tolerably well borne. In peritonitis, the mere weight of the bedclothes causes pain, while firm pressure is unbearable.

Pain in the abdomen, resulting from the passage of gall-stones from the liver into the small bowel, as well as that produced by a stone passing from the kidney through the ureter into the bladder, will be alluded to in another place.

Pain in the hip usually denotes an affection of the sciatic nerve that passes downwards on the outside of the thigh. The disease may arise from a variety of causes, and is both stubborn and painful. The pain is lancinating, tearing, or grinding, and shoots with rapidity along the course of the principal nerves, sometimes to the calf, the heel or the toes. In sciatica the suffering is greatest at night, and when a paroxysm has somewhat abated, the limb feels heavy, has a throbbing sensation, and slight movements excite pain.

Pains in the extremities may be due to neuralgia, in which case they will be sudden, sharp and lancinating, and will occur in paroxysms. Rheumatic pains in the limbs are continuous, and are greatly intensified by any movement of the part. In acute inflammatory rheumatism the joints are the seat of severe pains, which are attended with redness and swelling of the part. In chronic rheumatism the pain is dull and of an aching character.

Non-rheumatic inflammation of the joints will give rise to pain differing but little, if any, from that observed in acute inflammatory rheumatism. The history of the patient will aid in making the diagnosis between the two diseases. Thus, in rheumatism there is usually a history of previous attacks, while inflammation of the joints, not connected with rheumatism, occurs as the result of direct injury, or else it is one of the results of a scrofulous diathesis. In the latter case it usually ends in a protracted affection of the bones and cartilages of the affected joint.

Treatment.—Moist heat, when properly applied, is the most valuable of all the domestic remedies that are used in the alleviation of pain. The hot water bath and the ap-

plication of flannels that have been dipped in hot water, will be sufficient to give relief in many cases. It must be remembered that to be effective the water must be as hot as can be borne, and when flannel cloths are used they must be large and of considerable thickness; otherwise, the heat will not be sufficient to relieve the pain. In the article on toothache full directions have been given for applying moist heat by means of flannel cloths wet with hot water.

Headache, when caused by derangement of the stomach, is best relieved by administering a Seidlitz powder, to which a teaspoonful of Epsom salts may be added. After the medicine has moved the bowels, a quiet sleep will generally restore the patient to his usual health.

Nervous or sick headache commonly lasts a day or two in spite of all treatment. When the pain in the head is very severe, the application of hot water contained in a bladder or rubber bag will often give some relief. If such articles are not at hand, flannel cloths, dipped in hot water and wrung as dry as possible, can be used. When there is much sickness at the stomach it is best to encourage vomiting by giving lukewarm chamomile tea. If the patient is constipated, the bowels should be moved by means of a Seidlitz powder or other mild purgative.

In the different forms of *brain disease*, the pain in the head is but little under the control of domestic remedies. In most cases the application to the head of a bladder or rubber bag, filled with hot water, will be soothing. No one but a physician, however, should undertake to treat a patient who is suffering from disease of the brain.

The pains that accompany *muscular rheumatism*, wherever situated, usually yield to the application of strong hartshorn liniment, followed by the hot flannel cloths, which should be continuously applied until the patient is comfortable.

In acute inflammatory rheumatism of the joints the local applications alone will not often relieve the severe pain, and the administration of opium, or some of its preparations, will sometimes be necessary to enable the patient to endure his sufferings.

The pain of lumbago can usually be relieved by dry cupping the affected parts, after which large flannel cloths, wet with hot water, should be applied until the patient is easy.

It is not difficult to cup the back or any other broad surface of the body. If the ordinary cupping glasses cannot be had, a small tumbler with smooth edges will do. The tumbler should be of rather thick glass, to prevent the edge from cutting into the skin. The parts to be cupped being made bare for the operation, the tumbler is held in the left hand and a half teaspoonful of alcohol is dropped into it; shake the glass and pour out the contents quickly. With a lighted taper set fire to the alcohol that adheres to the tumbler. If the alcohol runs along the edge or mouth of the glass it should be quickly wiped off before the taper is applied. The operation, to be successful, must be rapidly performed.

If the surface to be cupped is at all level, so as to permit the tumbler to fit accurately at all points, no difficulty will be experienced in getting it to adhere closely to the parts; but if the surface is uneven and the bone below it thinly covered with flesh, a large tumbler will not adhere, and a cupping glass with a small mouth must be used. After remaining in position for five or ten minutes the glass must be carefully removed. To do this with ease the point of a finger can be placed on the skin just outside of the glass, and firm pressure made so as to permit the air to rush in under the edge of the glass.

Neuralgia can often be relieved by the application of moist heat, applied in the manner above described; but in some

cases the pain may be so severe as to require the administration of some preparation of opium, in addition to the use of the hot-water cloths. It must be remembered, however, that opium should not be given in those cases where the symptoms indicate disease of the brain.

The pain of pleurisy can be mitigated either by the use of large mustard plasters or by the hot-water cloths. Sometimes it is best first to apply a mustard plaster and follow it with the hot-water applications. In very severe cases, dry cupping, to be followed by the hot cloths, will greatly mitigate the pain. Of course, so grave a disease as pleurisy should always be treated by a physician.

Pains about the region of the heart, depending upon indigestion or nervous influences, and not connected with organic disease of that organ, are properly treated by applying large mustard plasters over the affected part. Redness of the skin should be kept up for quite awhile by occasionally re-applying the plasters.

The pain that attends angina pectoris is usually of short duration, and there is but little time in which to apply remedies for its relief. Besides, the medicines used in the treatment of the disease are of a dangerous character unless given by those who have an intimate knowledge of their effects. Persons who are subject to attacks of angina pectoris, if addicted to tobacco smoking, must abandon the habit entirely.

Pains in the abdominal cavity, whether they proceed from strangulation of the bowels, or from peritonitis, or from almost any other cause, should be treated by enveloping the whole abdomen with flannels that have been dipped into hot water and wrung as dry as possible. These applications should be renewed quite often, and if they do not give relief from pain, the patient should take a full dose of some preparation of opium. Twenty-five or thirty drops of lauda-

num can be given to a grown person, and if the pain continues severe the dose may be repeated in two hours.

Pains in hysterical persons can sometimes be relieved by hot applications to the painful part, and by the administration of the fluid extract of valerian, or other anti-spasmodic medicines, which seem to relieve the nervous condition upon which the pains depend. Occasionally, the patient may suffer to such an extent as to require a small dose of laudanum, or Godfrey's Cordial, to mitigate the symptoms and produce rest.

The pain in sciatica is often excruciating, and is apt to be long continued. The disease should always be treated by a physician, as the intense suffering renders it necessary to resort to a class of remedies in its treatment that would be unsafe in the hands of non-professional persons.

Great relief, however, can often be obtained by closely wrapping the affected limb, from the toes up to the hip, with two or three folds of flannel that has been dipped in hot water and lightly squeezed to rid it of a part of the water. Over this should be placed a fold of dry flannel, or, what is better, a piece of oil silk, which should be neatly fastened around the limb.

These applications should occasionally be renewed, so as to keep up the effects of the moist heat.

Pains caused by inflammation of the joints, not due to rheumatism, are best treated by hot-water dressings constantly applied. When matter begins to form in the parts, the warm-water dressings can give place to large warm poultices, which should be changed several times during the day and be kept constantly wet.

CHAPTER III.

Diseases of the Bowels.

CHOLERA MORBUS.

CHOLERA MORBUS usually occurs during the warm months of summer and in early autumn. Persons who have become over-heated from any cause, after a hearty indulgence in such articles of diet as are apt to produce fermentation in the stomach or bowels, are especially liable to an attack of the disease.

The attack usually commences in the night a few hours after retiring. During the day the patient has most likely become over-heated from hard labor, and, being thirsty, has indulged in frequent and copious draughts of cold water, thereby weakening his digestive powers. At his evening meal, while in an exhausted condition, he has partaken freely of vegetables or fruits that are slow of digestion, or that quickly undergo fermentation, and during the night the contents of the stomach, being in a fermented condition, give rise to vomiting, purging and violent cramps.

Such is the history of ordinary cases, but occasionally the disease is met with where the exciting cause is involved in some doubt.

The attack may be preceded by slight nausea, perhaps diarrhœa, and a feeling of debility of one or two days' duration. Usually, however, the disease commences suddenly without previous warning. The patient awakens in the

night with a sense of chilliness and a disagreeable feeling of pressure at the pit of the stomach, which is soon followed by nausea and vomiting. The vomiting becomes frequent and persistent, and is in nearly all cases followed in a short time by excessive purging. Sometimes, however, the purging may be delayed for some hours after the vomiting and cramps have become painful and alarming.

At first the vomited matters consist of the ordinary contents of the stomach, but after awhile mucus mixed with water is thrown up. As the disease progresses, all articles swallowed are returned almost as soon as they reach the stomach.

The first discharges from the bowels are somewhat natural, but they soon become thin, are of a light color, and consist of mucus mixed with water. In very severe cases they resemble the discharges that are seen in Asiatic cholera, being copious, thin, and almost without color. When first passed they look almost like pure water, but after standing awhile in a vessel a sediment forms, giving them the appearance of thin oatmeal gruel or rice water.

If the exhaustive discharges continue in quick succession, the body shrinks, the face becomes pinched and of a livid hue, the surface cold and covered with a clammy sweat; the hands shrivel and become wrinkled; the tongue and the breath are cold; the urine is either suppressed, or it is secreted in small quantities.

The cramps begin in the region of the stomach, and follow an attempt at vomiting. As the disease progresses they extend to the muscles of the legs, the calves of which are affected to such an extent as to cause the patient to cry out with pain. In some cases the cramps extend to the muscles of the neck and the upper extremities.

During the course of the disease the thirst becomes intense, the patient, if allowed to do so, taking large draughts of cold water, which is thrown up in a few seconds.

The above symptoms apply to cholera morbus in its most severe form, between which and the mildest cases, where recovery takes place soon after the stomach and bowels are emptied, there are numerous examples of every degree of severity.

Cholera morbus is rarely a fatal disease, and if epidemic cholera is not prevalent, the chances are that the patient will recover, even though the symptoms be of the gravest character.

Treatment.—In the mildest cases of cholera morbus but little treatment is necessary. After getting rid of the irritating or indigestible food, or fermenting matters, by vomiting and purging, the patient may proceed rapidly to recover.

In severe cases, however, prompt treatment is necessary, and after sending for a physician, and before his arrival, all that is possible should be done to relieve the patient from his suffering.

The great remedy for the relief of cholera morbus is sulphate of morphine, in doses of a fourth to a third of a grain by hypodermic injection. This, however, should be administered by a physician only, and in his absence the patient's friends will content themselves with other and less hazardous measures.

Mustard plasters, large enough to cover the whole front of the chest and the abdomen, should be applied and kept on as long as they can be well borne. At first, small quantities of ice water—a tablespoonful at a time—can be given to allay thirst, or small bits of ice can be swallowed for that purpose. If the vomiting continues, and especially if cramps of the stomach occur, a cupful of water, *as hot as can be borne*, should be swallowed repeatedly. If the water is merely *warm* it will do no good. To aid in relieving the cramps in the stomach and bowels, *hot water in large quantities*, frequently injected into the bowels, will be of great service.

If, in spite of these measures, the patient continues to cramp and purge, it may be necessary to venture upon the administration of from thirty to thirty-five drops of laudanum to a grown person. The dose, however, had better not be repeated before the arrival of a physician, for, although the patient may vomit soon after taking the laudanum, yet he may not throw up all of the medicine, and to repeat the dose under such circumstances might be injudicious and attended with danger.

To prevent the laudanum from being thrown up, it is best to give it soon after the patient has had a spell of vomiting, and after the skin over the stomach and bowels has been thoroughly reddened by a mustard plaster. Nothing but small bits of ice or a tablespoonful of cold water should be given for some time after administering the laudanum; otherwise the medicine will not be retained.

If laudanum, or any other preparation of opium, has been given, the physician must be notified of the fact as soon as he arrives, so that he may fully understand how to proceed in the future management of the case.

Small doses of calomel, from one-eighth to one-fourth of a grain, mixed with white sugar and laid upon the tongue, to be washed down with a teaspoonful of cold water, will aid in arresting the vomiting and purging. If necessary the dose can be repeated every half hour until three or four doses are taken.

When the disease passes into the cold stage, additional means may be necessary to restore warmth to the body and stimulate the heart to increased action.

If the application of large mustard plasters, and the use of hot water injections have failed to restore sufficient warmth to the body, the next thing to do is to apply heat to the surface by means of bricks, or good sized rocks, well heated and laid on the bed beside the patient. A blanket

should be spread under and one over the patient's body, and upon the former can be laid bricks that have been heated in a fire and afterwards wrapped in wet cloths; the upper blanket must be drawn closely around the body so as to retain as much of the heat as possible. Care must be taken not to burn the patient, and to avoid this the bricks should not at first be placed directly against him. Several bricks should be used, beginning at the shoulders and extending at intervals down to the feet on each side of the body. This is the most effective method of applying heat during the cold stage of cholera morbus, and if the process be conducted with care and discretion, no harm need be apprehended from it.

Small doses of brandy, or other spirits, given without dilution, will often aid materially in restoring the circulation and overcoming the extreme coldness of the surface of the body, but after reaction has been established such drinks should be discontinued.

Convalescence is somewhat slow after severe attacks of cholera morbus. The patient will be weak, will suffer from great soreness of the muscles, and in some cases he will have fever for a few days. He must, therefore, remain in bed until his strength returns. The diet should be of the blandest character and of easy digestion, and be taken in small quantities at a time. No large draughts of water or other fluids should be swallowed; but the thirst may be relieved by small drinks of cold water, taken, if necessary, quite often.

Dysentery, or flux, sometimes follows cholera morbus, but as a separate article has been given to that disease, it need not be treated of here.

DIARRHŒA.

Diarrhœa is a very common disorder, and is characterized by a frequent desire to go to stool and by the evacuations

being more liquid than the healthy discharges from the bowels.

The disease may originate from different causes; irritation of some part of the intestinal tract being the most frequent. Errors in diet, either in quantity or quality, will often give rise to diarrhœa. The eating of unwholesome articles, such as animal food when approaching a putrid state; of sour, unripe fruits; or of such raw vegetables as cucumbers, melons, etc., may be followed by an attack of the disease.

Diarrhœa may also follow prolonged constipation of the bowels. The contents of the intestines being retained for some time may produce a diarrhœa that is salutary, being nature's method of getting rid of an offending substance.

In irritative diarrhœa the evacuations are usually preceded by severe griping pains, and at first consist of the ordinary contents of the bowels, which, however, are bad smelling, and soon become watery, flowing from the body in a stream. The discharges at first are large, but gradually become less in quantity. Their number varies greatly; in severe cases the patient may be compelled to go to stool every hour or half hour throughout the day.

Sometimes the causes that ordinarily produce irritative diarrhœa may be sufficient to excite inflammation of the mucous membrane of the bowels, constituting the inflammatory form of the disease. Such cases are attended with fever, and the evacuations usually become smaller, more watery, and contain shreds of mucus mixed with the other ingredients. The inflammation may extend to the large bowel, producing flux or dysentery.

The action of the bowels is greatly influenced by mental emotions. Even a chronic looseness of the bowels may be maintained by debility of the nervous system induced by worry and anxiety.

In the latter stage of Bright's disease of the kidneys, diarrhœa is often present, nature in this manner making an effort to rid the system of the poisonous urea which can no longer be eliminated by the kidneys.

Acute diarrhœa usually terminates in recovery. Sometimes, however, it may lapse into dysentery and end in death. In other cases the disease becomes chronic, constituting a form of diarrhœa that is extremely difficult to cure, the patient, in the end, dying of general debility.

All cases of chronic diarrhœa should be treated by a physician. The lesions of the bowels in this form of the disease are serious, and but little inclined to yield to the curative action of remedies.

The treatment of diarrhœa depends to a great extent upon a knowledge of its cause and the conditions present in each case, as well as upon its ordinary duration and termination. The diet must be restricted, and food and drinks should be given in small quantities only. Rice, arrow-root, tapioca and the like are useful and may be given in boiled milk, or in chicken or mutton broth.

All articles that are slow of digestion, or that easily undergo fermentation in the stomach must be excluded. Fruits, especially those that are acid and contain numerous small seeds should be avoided.

Thirst should be allayed by giving cold water or iced tea in small quantities at a time.

In acute diarrhœa the patient should rest quietly in bed until the severe symptoms have passed away.

When the disease is caused by indigestible articles of diet, or by retained fecal matter, the purging tends to relieve the bowels, and should, at first, be encouraged. A dose of syrup of rhubarb or castor oil or Epsom salts may be given to clear out the intestinal canal. If pain or griping is felt with the operations, one or two teaspoonfuls of Godfrey's Cordial can be given with the purgative.

After the bowels have been thoroughly emptied of their irritating contents, rest in bed, with attention to the food and drink, will usually be all that the patient will require. If, however, the diarrhœa should continue, a dessertspoonful of Godfrey's Cordial, combined with a half teaspoonful of essence of ginger, can be given occasionally.

When diarrhœa assumes an inflammatory form, as shown by fever and tenderness of the bowels, the abdomen should be covered with flannel cloths that have been wet with hot water. These should be frequently changed, so as to secure the constant effects of moist heat. At the same time small doses of laudanum, or some other preparation of opium, may be given to moderate the pain and griping sensations. As these cases, however, are usually protracted and somewhat dangerous, their management should be entrusted to a physician.

A diarrhœa that continues for some time after the bowels have been cleared of their irritating contents may require astringent medicines for its cure. When the discharges are loose and watery and not attended with much pain, and when they occur in a person who is weak and has lost flesh, and who has no fever or evidence of inflammation, such astringents as sugar of lead, tincture of kino or powdered tannin, combined with a small amount of opium or some of its preparations, will be of use in arresting the discharges. But it should be remembered that absolute rest and attention to the diet are the main factors in the cure of acute diarrhœa.

The doses of medicine recommended in this article are intended for grown persons.

When diarrhœa assumes the form of flux, as shown by the stools becoming small, painful, and attended with considerable straining—being composed of mucus, or mucus mixed with blood—the treatment recommended for dysentery should be commenced at once.

DYSENTERY, OR FLUX.

This disease may appear in either one of two forms: first, *catarrhal dysentery;* second, *epidemic dysentery.*

The catarrhal is much the milder form of the disease, and may be caused by long retention of fecal matter in the lower bowels, or by the presence there of acrid or indigestible articles of diet, such as unripe cherries, grapes, etc., the seeds and skins of which are not only indigestible, but highly irritating.

Sudden arrest of perspiration by exposure to cold—especially to damp cold—is sometimes the cause of the disease. When dysentery is caused by retention of fecal matter in the bowels, the result of long-continued constipation, or from the eating of unripe fruits, the attack may be sudden and without preceding fever or other manifestation of disease. In such cases a prompt and decided dose of castor oil combined with fifteen drops of laudanum, if the patient be an adult, will usually put an end to the trouble as soon as the bowels have been thoroughly evacuated. Rest for a day or two, together with abstinence from all food, except such as is of a bland character, is often all that is needed to restore the patient to his usual health.

If, however, a case of catarrhal dysentery be neglected, and no effective treatment be adopted to check it in the start, the disease may increase in intensity until inflammation has developed in the large bowel, when the disease will be attended with fever and other symptoms of epidemic dysentery.

When flux prevails as an epidemic, it is usually called *epidemic dysentery.* However, the disease may, in the beginning, assume the catarrhal form, being caused by the ingestion of irritating or fermenting articles of diet, and by being neglected may end in inflammatory dysentery

The disease prevails during the late summer and early autumn months, when the change of temperature from night to day is greatest; hence climatic influences are important factors in its production.

Dysentery is especially prone to occur in malarial districts, owing probably to obstruction to the circulation in the liver induced by paroxysms of ague. In such cases the malarial element becomes a prominent complication, and requires the use of quinine in its treatment.

Some writers conclude that the disease is caused by the presence of microbes or germs that are received into the body through the medium of the food, drink, or the air. Whether this be true or not, experience seems to prove that the discharges of the patient, if neglected and allowed to contaminate the air that is breathed by a healthy person, may be the means of spreading the disease. The discharges undergo fermentative changes after being passed by the patient, and dysentery, like cholera, may be propagated to a frightful extent in this manner.

In a majority of cases an attack of epidemic dysentery begins with a feeling of debility, loss of appetite, chilliness followed by feverishness, and a diarrhœa that, at first, is loose and free from the pain, straining, and desire to remain on the vessel, so characteristic of a dysenteric operation.

In the course of one or two days from the beginning of the first symptoms there is a decided change in the nature and aspect of the discharges. They become small in quantity and consist of a yellowish white mucus resembling a mixture of the white and yelk of an imperfectly cooked egg; or there is an admixture of a transparent, glairy matter with streaks of blood; or else they may consist mainly of blood intimately mixed with mucus.

The evacuations are preceded by an intense desire to be almost constantly on the vessel, the patient being unable to

pass more than a spoonful at a time, and that with severe pain and without much, if any, relief to his suffering.

There is great pain at the lower end of the bowel, often extending to the bladder, and causing a frequent desire to pass water, which act is attended with considerable difficulty and suffering.

The lower bowels are exceedingly tender upon pressure, and are the seat of griping or "colicky" pains.

In severe cases, from the eighth to the fourteenth day of the disease, the stools may become extremely offensive and consist of a reddish serous liquid, in which may be seen pus and shreds of mortified parts of the bowel. The term "flesh washings" has been used to denote the character of such discharges.

Vomiting often occurs during a severe attack of dysentery, and in some cases it is a serious complication, being frequent and persistent, thus interfering with the administration of remedies and the nourishment of the patient. The thirst is great; the tongue is either covered with a white coat or it is red and dry, and the patient's strength is rapidly exhausted.

In fatal cases, as the disease progresses the evacuations are passed in bed, the patient being unable to control them. The face is pinched and has an anxious expression; the skin is dry, harsh and wrinkled, and the pulse is small and feeble.

From this condition the patient passes into a state of collapse. The pulse cannot be felt at the wrist; the skin is covered with a cold sweat; the hands, feet, face, nose and ears become cold and livid; the eyes are sunken and the voice is husky. An obstinate hiccough distresses the patient, whose mind usually remains clear, notwithstanding the severity of the symptoms. The patient may remain in this condition for some days before death takes place.

If the disease runs a favorable course the symptoms gradually subside; the intervals between the evacuations become longer; the discharges assume a brownish color and are more natural in character, the blood and mucus diminishing in quantity. The pulse becomes stronger, the tongue grows moist and the mind clearer. Convalescence, however, is slow, and weeks elapse before the patient regains his strength.

After the acute symptoms subside the disease may assume the form of *chronic dysentery*. In such cases the ulcers that have formed in the large bowel do not heal, but are kept constantly irritated by the passage over them of the contents of the bowels, causing pain and a frequent desire to go to stool. The appetite is uncertain; the tongue is often smooth and shining; the patient is weak and emaciated, and he may continue in this condition for months or years, finally dying from exhaustion or from intercurrent disease. Sometimes, however, cases of chronic dysentery, under proper treatment, may end in complete recovery.

During the prevalence of an epidemic of dysentery, cases may occur where the attack is sudden and without the premonitory symptoms heretofore alluded to. The patient is seized with chilliness followed by fever. The discharges from the very beginning are of the peculiar character that belongs to flux, being small in quantity and consisting of mucus or blood, or of both. There is a constant desire to go to stool, and the operations are attended with severe pain.

Treatment.—The treatment of epidemic flux should in all cases, when possible, be conducted by a skillful physician. The disease is dangerous, and is attended with so much pain and suffering that a medical practitioner should be sent for without delay. Before his arrival, however, many things can be done to alleviate the patient's distress, and possibly aid in his recovery.

The patient should take to his bed and remain there as quietly as possible. Standing, or sitting upright, tends, by gravitation, to produce engorgement of the blood-vessels of the lower bowel. Not only should the patient assume the recumbent position, but he should also have his hips somewhat elevated by a pillow or other soft article being placed under them.

The desire to get on a vessel must be resisted as much as possible, and, when the patient can no longer refrain from going to stool, he should sit in a vessel containing hot water, into which he can pass his discharges. The hot water will be quite soothing to the inflamed parts, and much of the griping and pain that attend a dysenteric operation will be relieved by it. Further along in the disease hot water injections into the bowel will not only have the effect of relieving pain, but will also aid in overcoming the inflammation upon which the disease depends.

After getting back to bed, the patient should have cloths that have been wrung out of hot water placed over the lower part of his abdomen.

If thirst is present it may be allayed by small draughts of cold water; and if there is sickness at the stomach, with vomiting, small lumps of ice can be swallowed.

If the patient has eaten unripe fruits, or other indigestible articles, he should, if a grown person, take a full dose of castor oil, to which ten drops of laudanum have been added. This will serve to clear out the bowels and give some relief to the pain.

During the subsequent progress of the disease, when the discharges from the bowels are frequent and small in quantity, a teaspoonful of Epsom salts, combined with five or six drops of laudanum, can be given occasionally with good effect.

If the pain continues to be severe after the above-named remedies have been employed, the patient, if an adult, may

take fifteen or twenty drops of laudanum in a teaspoonful of water. If necessary, this can be repeated every two or three hours until relief has been obtained.

Injections of laudanum and starch water into the bowels have often been recommended, but they are rarely retained long enough to do any good, and unless administered with care they may be a source of positive harm. Occasional injections of considerable quantities of hot water not only afford material relief to the pain, but they also assist in the cure of the disease.

Considerable care and skill are required in the use of injections, to avoid injuring the patient and causing him pain.

Other remedies have been found useful in the treatment of flux; but as they should be prescribed by a physician only, they need not be mentioned here.

The diet in this disease must be carefully attended to, and should be of a mild, bland character. Such articles as leave a large residuum after undergoing digestion must not be allowed. Milk, soups, gruel and rice should form the principal part of the patient's food.

CHAPTER IV.

Bilious, Kidney, and Wind Colic.

BILIOUS OR HEPATIC COLIC.

AN attack of bilious colic is caused by the passage of gall-stones from the liver to the small bowel. The disease is rare in infancy and childhood, but after puberty it is not so very infrequent.

As long as gall-stones remain quiet in the gall-bladder they seldom give rise to pain or any other symptom denoting their presence; but when they change their position and enter the cystic, or the common duct, they may cause the most intense suffering.

At the commencement of a paroxysm of hepatic colic, pain, at first of a dull character, but soon becoming lancinating or cutting, is felt in the region of the liver. The intense pain, which, in nervous persons, may produce delirium and convulsions, extends from the liver to the region of the stomach, and in some cases to the shoulder.

Vomiting is usually present, the food, at first, being thrown up, after which the matters ejected consist of water and a colorless mucus.

When the attack is very violent the pulse may become frequent, small, and almost imperceptible; the breath loses its natural warmth, and the body is bathed in a cold sweat. Death, though extremely rare in this disease, may occur under these circumstances.

In some cases of hepatic colic the patient becomes jaundiced, owing to the complete closure of the duct through which the bile passes from the liver to the small bowel.

The duration of an attack varies, lasting but a few hours in some cases, while in others it may continue for some days. As soon as the gall-stones pass through the duct and enter the bowel the patient is relieved; the stools, which before had been white, become dark, and the jaundice begins to disappear.

In the treatment of hepatic colic the hot bath is of very great importance. The patient should be placed in a tub that is deep enough to permit the water to come well up around his body. A blanket should be thrown over him and fastened around his neck. The bath must be kept as hot as can be borne by occasionally adding fresh supplies of hot water. The patient should be kept in the bath for a long time, or until he feels weak and faint, when he must immediately be removed from the water and put to bed, after which his abdomen should be covered with warm water cloths. These can be continued as long as the pain is severe.

Castor oil or Epsom salts may be given, to be followed by injections of hot water, for the purpose of moving the bowels.

If these measures are not sufficient to control the pain it will be necessary to resort to the use of some preparation of opium. If the services of a physician cannot be obtained, twenty-five or thirty drops of laudanum in a little water may be given to an adult, and if, after two hours have elapsed, the pain still continues severe, the dose can be repeated.

KIDNEY OR NEPHRITIC COLIC—PASSAGE OF GRAVEL FROM THE KIDNEY TO THE BLADDER.

Sometimes calculi or gravel form in the kidney, the result of the precipitation of uric acid, or the oxalate of lime, around a matrix composed of mucus, or blood corpuscles.

In number, size, and shape these concretions present the greatest diversity. In some cases a kidney may contain only one, while in others there may be hundreds of minute calculi in the organ. In size they vary from a pin's-head to a horse bean, and if one becomes permanently lodged in the pelvis of the kidney it may go on increasing in size until it weighs several drachms or ounces. Such stones are liable to give rise to inflammation, to abscess, and to other diseases of the kidney.

When a stone of some size leaves the kidney and begins its descent along the ureter to the bladder it produces symptoms of a most marked and painful character. The patient is suddenly seized with intense and agonizing pain in the region of the kidney, accompanied with a most prostrating sickness and in some cases with severe cramps. The pain shoots down along the ureter to the bladder, the privates, and to the inside of the thighs. There is an incessant desire to make water; but the amount passed is scant, being often limited to a few drops at a time. The urine is high colored, often mixed with blood, and is voided with great pain and burning. The patient becomes restless; he tosses himself from side to side, or gets up and leans in a bent position against a chair or the edge of the bed. Failing to obtain relief in one position he tries another, only to meet with the same disappointment. He vomits frequently, and as the disease progresses his skin becomes covered with a cold perspiration. His agony seems to be unbearable, and it is questionable if any pain is more agonizing and harder to bear than that produced by the passage of a stone from the kidney to the bladder.

If the acute symptoms continue long the patient becomes feverish, with a hot skin, a quick pulse, and an incessant thirst.

After these symptoms have continued for an uncertain period—it may be a few hours or it may be days—the patient experiences sudden relief. The stone passes out of the ureter into the bladder and the suffering is at an end.

In rare cases the stone may not pass entirely through the ureter, but be arrested at some point in its course. When this occurs the relief will not be complete, for, although the symptoms are modified, they do not entirely subside, and if both ureters become entirely closed by the presence of stones, death rapidly takes place. This condition, however, is of very rare occurrence.

The treatment of paroxysms of nephritic colic is similar to that recommended for the relief of hepatic colic. The hot water bath, to be followed by hot water cloths, and in severe cases the administration of some preparation of opium, are the principal means of affording relief. Sometimes the pain is so severe and long continued as to compel the physician to administer chloroform for its relief.

Moist heat, when long continued, has the effect of subduing muscular spasm, thus permitting the ureter to dilate sufficiently to enable the stone to pass into the bladder.

INTESTINAL OR WIND COLIC.

This disease consists of painful and irregular contractions of the muscular fibres of the intestines, and is not accompanied with fever.

The principal cause is irritation of the bowels from accumulation of gas due to fermentation of undigested food and the decomposition of fecal matter that has long been retained in the large intestine.

The eating of certain articles of indigestible food, the presence of worms in the intestines, as well as various other causes of irritation of the intestinal tract, may give rise to the disorder.

The characteristic symptom of intestinal colic is irregular or paroxysmal pain situated in the abdomen and beginning at, or near, the navel, and spreading thence to other parts or perhaps to the whole abdomen.

The duration of the disease varies greatly; the attack lasting but a few minutes in some cases, while in others it may continue for many hours, leaving the patient with great soreness in the abdomen.

Colic usually ends in recovery after a free evacuation from the bowels. Sometimes, however, the trouble is caused by strangulation or twisting of the bowel, and when this is the case fatal peritonitis is likely to occur within a few days from the commencement of the attack.

The treatment consists in first securing a thorough evacuation of the bowels. This can be done by giving a full dose of Epsom salts or castor oil to which a small amount of Godfrey's Cordial has been added. At the same time injections of large quantities of hot water should be used frequently until the bowels have been thoroughly emptied. When the pain is excessive the hot water bath should be resorted to, and afterwards hot water cloths should be applied over the whole of the abdomen. A mixture of turpentine and lard can be briskly rubbed over the abdomen each time the hot water cloths are renewed.

Internally the patient can take a few drops of the essence of peppermint that has been dropped on a lump of sugar. Sometimes drinking a large glass of very hot water will afford great relief.

In very severe cases it may be necessary to administer some preparation of opium to relieve the agonizing pain and cramps, but as stubborn cases of this kind often depend upon some serious lesion in the bowels it is safest, under such circumstances, to secure the services of a physician without delay.

CHAPTER V.

Miscellaneous Diseases.

FAINTING, OR SYNCOPE.

FAINTING may be induced by sudden failure of the heart's action from any cause.

The liability to syncope varies greatly in different persons, some being almost proof against it, while others faint from the slightest possible cause.

The trouble occurs most frequently in nervous persons, and may be due to a variety of causes, such as the emotions of fear, grief, joy, etc. The sight of blood readily produces fainting in some persons. Injuries of the great nervous centres, as in concussion of the brain, will give rise to the trouble. Sometimes irritation of the stomach, bowels, womb and other organs, produce fainting through reflex action of the nervous system. The loss of a large amount of blood, as in hemorrhage during labor, is often followed by fainting, which in some patients soon ends in death. Confinement in a hot, impure atmosphere, as well as remaining too long in a hot bath, will, in many persons, induce fainting.

A person about to faint becomes pale, staggers, or leans against the nearest support; the eyes roll upward, while the lids close, and consciousness is impaired. The respiration is irregular and feeble; the pulse is weak, frequent and irregular. In a short time consciousness is completely lost and the patient falls. The surface of the body is pale and possibly cold; the eyes are closed and the pupils dilated; the

breathing cannot be distinguished, or else it occurs as occasional weak sighs.

In cases of fainting from loss of blood there may be restlessness and delirium, followed by convulsions.

Recovery from fainting is marked by gradually returning consciousness, by an increase of the pulse at the wrist, and by the re-appearance of the respiration. At first there is a slight movement of the hands and head with deep sighing. Color returns to the face and lips, and warmth to the extremities, while consciousness is gradually restored.

An attack of fainting varies from a few moments to an hour or more in duration, and may be followed in a short time by others of the same character.

The usual termination of syncope is in recovery; but when it arises from loss of blood or from organic diseases of the heart, it may be fatal.

If it be associated with hysteria in a highly nervous woman, the liability to syncope may last for months, or even years.

In the treatment of fainting two indications are to be met, namely, removal of the cause of faintness and restoration of the heart's action.

If a person faints, but has not fallen, he must be caught and laid flat on his back. Air must be freely admitted to him either by throwing open the doors and windows, or by taking him out into the open air. The dress should be loosened about the neck and abdomen. If he is bleeding, means must be adopted to stop it, while his head is placed lower than his body. If the patient be in a room it must be cleared of all persons except those who are engaged in waiting upon him. If he is in the open air the crowd must be kept at a distance from him.

Brandy, or other spirits, either pure or in water, should be given if the patient can swallow. Smelling salts or spirits

of hartshorn can be held near the nose for the purpose of exciting the heart reflexly through the nervous centres. If the ability to swallow is lost it may be necessary to use injections of brandy or other strong stimulants.

When the patient begins to rally, a teaspoonful of the aromatic spirits of ammonia, in a half wineglassful of water, can be given every fifteen or twenty minutes until reaction has been fully established.

After reaction has taken place the patient should remain at rest in bed for some time, and before assuming the upright position he should partake of some nourishment if it can be borne.

SUNSTROKE.

Sunstroke is caused by the influence of excessive heat upon the human body, and may be divided into three distinct forms; first, simple exhaustion from heat; second, heat fever, or true sunstroke; and third, inflammation of the membranes of the brain, which is very rare and need not be treated of in this article.

Owing to a variety of causes some persons are more easily affected by heat than others. Inability to withstand high degrees of heat may be owing to constitutional causes, but more often it is due to certain habits of life. Thus, those who are addicted to the habitual consumption of beer and alcoholic drinks are more liable to the disease than those who are free from such indulgences.

Excessive fatigue from hard manual labor renders one liable to sunstroke under conditions favorable to its development. Exposure to the direct rays of the sun is the common exciting cause of the disease, but it may occur as the result of being confined in over-heated and over-crowded rooms without proper ventilation.

In the simple form, or heat exhaustion with fainting, the surface of the body is pale, cool and moist; the pulse is quick and feeble, and the respirations are short and hurried.

In the beginning of the attack the sight becomes dim, the ears are affected with peculiar rushing sounds, and the patient sinks down in an unconscious condition. Usually in a few hours, under proper treatment, the symptoms subside and the patient speedily recovers.

In the second form (true sunstroke) the patient complains of frontal headache, is weak, and often has nausea, sometimes vomiting, and is troubled with giddiness. These symptoms may be followed in a short time by sudden loss of consciousness, the patient falling to the ground in a helpless condition. The surface of the body is flushed or somewhat livid in hue, the eyes are red and the pupils most usually contracted. The breathing is rapid, noisy, and labored, and often accompanied with a puffing or blowing sound during expiration. The skin is dry and hot, while the pulse is quick and sometimes feeble. Convulsions may occur, and the contents of the bowels and bladder are usually passed unconsciously.

The most severe cases of sunstroke may end fatally within a few minutes.

In favorable cases, when recovery is about to take place, the surface of the body becomes cooler and more natural in appearance; the breathing is deeper and less labored; the pulse is slower and more distinct; the patient becomes restless and consciousness gradually returns.

The treatment of sunstroke varies with the form of the disease. Thus in mild cases the patient should be laid on his back with his head low. Plenty of air should be admitted into the room, and persons must not be permitted to crowd around the bed.

If the patient can swallow, a teaspoonful of the aromatic spirits of ammonia in a half wineglassful of water can be given every quarter or half hour until reaction sets in. If the spirits of ammonia is not at hand, whiskey and water may be

given occasionally while the symptoms of prostration are present. If the patient cannot swallow, an injection consisting of a half teacupful of whiskey and as much water, to which forty drops of laudanum have been added, should be thrown into the bowel.

In the severe form of sunstroke, when the skin is hot and dry and there is a high grade of fever, cold water should be freely applied to the surface of the body by means of the sponge bath or the wet sheet. The cold water applications must not be continued too long, however, and if, after using them for a reasonable time, there seems to be no improvement in the patient's condition, it will be safer to use the water at a temperature of about blood heat.

As the fever subsides, if there is great exhaustion, as is shown by a weak pulse and feeble respiration, the vital organs should be stimulated by administering aromatic spirits of ammonia, or, if that cannot be had, by small doses of whiskey diluted with water.

In all cases after recovery from sunstroke the patient should, for some days, be kept at rest, and exposure to fatigue and excessive heat must be guarded against.

HÆMOPTYSIS, OR BLEEDING FROM THE LUNGS.

Hæmoptysis is, in nearly all cases, caused by some organic disease situated either in the lungs or in the heart. It so often depends upon consumption and so seldom upon other affections that its presence is regarded as evidence of a phthisical affection. Bleeding from the lungs may also be caused by obstructive disease of the heart, and in some females it may follow upon suppression of menstruation.

Symptoms.—Preceding an attack of hæmoptysis there is usually a sense of heat and oppression in the chest; and sometimes headache, vertigo, and palpitation of the heart are present. The quantity of blood brought up varies

greatly in different cases. Sometimes it is a mere streak, while at others a pint or a quart may be lost.

In severe hemorrhages from the lungs the blood is usually of a bright red color, and to some extent mixed with air. Occasionally, however, it will be dark and clotted. In other cases the quantity may be small and consist of streaks of a bright color. Sometimes large mouthfuls of red blood, plentifully mixed with air, are expectorated.

In favorable cases, after the hemorrhages cease, the patient continues to expectorate clots of dark blood, mixed with mucus, for several days. Sometimes the clots of coagulated blood lodge in one of the large bronchial tubes, producing considerable distress in breathing until the clot is discharged by coughing.

Bleeding from the lungs nearly always produces a great shock to the system, the patient being anxious and alarmed for his safety, especially during the first attack.

At first the temperature is depressed, afterwards it becomes normal, and in cases where the bleeding occurs in persons suffering from consumption it soon rises above a healthy standard.

The duration of the disease is variable. Sometimes but a trifling amount of blood is lost and the trouble is ended in a few hours. In other cases the bleeding may continue, at intervals, for several weeks, producing such debility that the patient is a long time in recovering his usual strength.

Hæmoptysis is known by the loose cough, the gurgling sound in the bronchial tubes, and by the repeated expectoration of bright, frothy blood. If one of the large vessels of the lungs containing venous blood gives way, the hemorrhage will be copious and consist of *dark* blood. This, however, rarely happens.

Ulceration of the throat, by involving a vessel in the tonsil, or the pharynx, may produce a hemorrhage that is liable

to be mistaken for hæmoptysis. A careful inspection of the throat and gums in all suspected cases will suffice to clear up any doubts that may exist as to the source of the bleeding.

Treatment.—After sending for medical assistance in all severe cases, the patient should be put to bed and absolute rest insisted upon. . He must not be permitted to talk, but should make his wants known by signs, or by writing. His room must be kept quiet, cool and well ventilated. Fresh air should be admitted freely into the room, but no currents must be permitted to pass near the patient's bed. The bed clothes should be light, but of sufficient quantity to be comfortable. Heat should be applied to the feet, either by means of bottles of hot water, or by hot bricks enveloped in cloths. In severe cases, small lumps of ice, contained in a bladder or flannel sack, can be applied for a few moments to the chest as near the bleeding point as possible. The ice bladder should be kept on the chest but a few moments at a time. If, however, the hemorrhage continues, it can be re-applied frequently. If proper care be taken, there is no danger of causing the patient to take cold by its use.

Assuring him that his attack is not dangerous to life is beneficial to the sufferer by reason of the soothing effect that such assurance exerts upon his mind.

Table salt is a popular domestic remedy in common use; but it should not be depended upon, as it is greatly inferior to other remedies in controlling hemorrhage.

The fluid extract of ergot, in doses of thirty drops, in a tablespoonful of water, to which the half of a rounded teaspoonful of gallic acid has been added, will be of great service in controlling the bleeding. The ergot and gallic acid can be repeated, if necessary, every hour or two until five or six doses have been taken. As the hemorrhage subsides the intervals between the doses can be lengthened.

The diet must be restricted to cold nutritious articles of a fluid or semi-solid nature. Stimulants, except in special cases, should not be administered, and thirst can be allayed by cold water given in small quantities.

Hæmetamesis, or Vomiting of Blood.

Vomiting of blood may be due to the laying open of an artery in the stomach, to congestion of the veins or capillary vessels of the gastric mucous membrane, or to disease of the blood, rendering it liable to transude through the vessels of the stomach under pressure of the circulation.

Chronic ulcer of the stomach, involving an artery, is the most frequent cause of gastric hemorrhage. In such cases the bleeding usually occurs soon after a meal, the quantity of blood lost varying greatly in different cases. It may be very trifling in amount, or it may be so great as to imperil life.

Cancer of the stomach is rarely accompanied by much bleeding, and when hemorrhage does occur it is in the form of slight oozing; and as the blood remains in the stomach for some time, being acted upon by the gastric juice, it becomes dark in color, and when thrown up constitutes the "coffee-ground" vomit so often present in gastric cancer. Vomiting does not always follow bleeding into the stomach, for instead of being ejected in the usual way the blood sometimes passes off by the bowels. In nearly all cases of gastric hemorrhage some of the blood finds its way into the bowels and is passed by stool. This may happen in a short time after the hemorrhage has taken place, or it may be two or three days before it passes out of the body in this manner. In such cases the blood, when passed by stool, will be dark and often of a pitchy character.

When red blood is vomited it is evidence that the hemorrhage is of recent occurrence, and the blood is most likely still being poured out into the stomach. When the vomit is

dark and consists of coagula or clots, we infer that it has remained some little while in the stomach, and that the hemorrhage may have temporarily ceased.

Females of weakly habit—especially those who are predisposed to consumption—sometimes suffer from vomiting of blood as the result of suppression of their monthly periods.

Symptoms.—When a copious hemorrhage into the stomach occurs, the patient complains of faintness accompanied with a feeling of weight at the pit of the stomach. The countenance is pale; the pulse is weak, and actual fainting may happen. Vomiting usually takes place in a short time, the amount and character of the blood thrown up varying with the severity of the case. If the hemorrhage into the stomach be sudden and profuse, the blood vomited will be red and fluid; but if the bleeding has been going on for some time, and in small quantities, the vomited blood will be of a dark color and contain coagula or clots.

The hemorrhage may cease soon after the stomach has been emptied, or it may recur at frequent intervals for an indefinite period.

Occasionally it is somewhat difficult to distinguish between hemorrhage from the stomach and from the lungs. In the former case the blood is brought up by vomiting; in the latter by coughing. In hemorrhage from the stomach the blood contains no "air bubbles," though in some cases it may be red. Usually, however, it is of a dark color, and is mixed with small particles of undigested food. In hemorrhage from the lungs the blood is of a bright scarlet color, is frothy, and contains mucus. After standing awhile it coagulates, and the clots thus formed, on being pressed upon, are found to contain air, which escapes with a slight noise.

Hemorrhage into the stomach is not usually fatal of itself. When death occurs it is ordinarily owing to the disease that

gave rise to the hemorrhage. Occasionally, however, death speedily follows an attack of vomiting of blood. This is apt to be the case when a large artery has been opened, or when an aneurism has bursted and poured out its contents into the stomach.

Treatment.—When large quantities of blood have been thrown up from the stomach no time should be wasted on dilatory measures; but prompt and energetic treatment should be instituted. If a doctor be near he should be summoned, but if he cannot be had the following directions should be followed: the patient should lie quietly in bed with his head on a level with his body. The room should be well ventilated, good, fresh air being necessary to his welfare. Visitors should be excluded from his room. No food must be given, but if the patient is thirsty he may have small lumps of ice to suck in case of faintness. It is best not to give brandy, or other stimulants, by the mouth, but a half-teacupful of whiskey may be injected into the bowel. Spirits of hartshorn should be held to the nose, while the face and forehead can be bathed with cold water. Ice, if it be at hand, should be enclosed in a bladder, or flannel sack, and laid over the stomach,

If the amount of blood vomited be small, gallic acid—half a teaspoonful at a dose—can be given to a grown person. It may be dissolved in a little warm water, or, what is better, enclosed in a capsule and swallowed with cold water. If the hemorrhage continues, the gallic acid may be given every quarter or half hour, until eight or ten doses have been taken, unless it produces sickness at the stomach, in which case it should be withheld for awhile. If this treatment, after having been tried for a reasonable time, fails to arrest the bleeding, or if the hemorrhage at any time becomes profuse and no physician be present, recourse must be had to Monsel's solution of the per-sulphate of iron. The usual dose of

this medicine is from five to ten drops given in a half wineglassful of water; but in cases of hemorrhage into the stomach attended with great danger to life, I have administered it in much larger doses. A small teaspoonful mixed with a wineglassful of water can be given with safety; but usually one-half that quantity mixed with a half wineglassful of water will be sufficient to arrest the bleeding.

In dangerous cases, when the hemorrhage continues, the iron can be repeated at intervals from a half hour to an hour apart. This remedy should be given only in cases attended with danger to life.

For several days after the arrest of the bleeding, the food must be of the blandest nature and given in small quantities. Warm drinks, as well as warm food, must be avoided, and the patient should be kept at rest, avoiding as much as possible, all sources of anxiety and worry. The bowels should be attended to, and if they do not act naturally, an injection of warm water and castor oil can be given with a view of removing the decomposed blood and other contents.

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